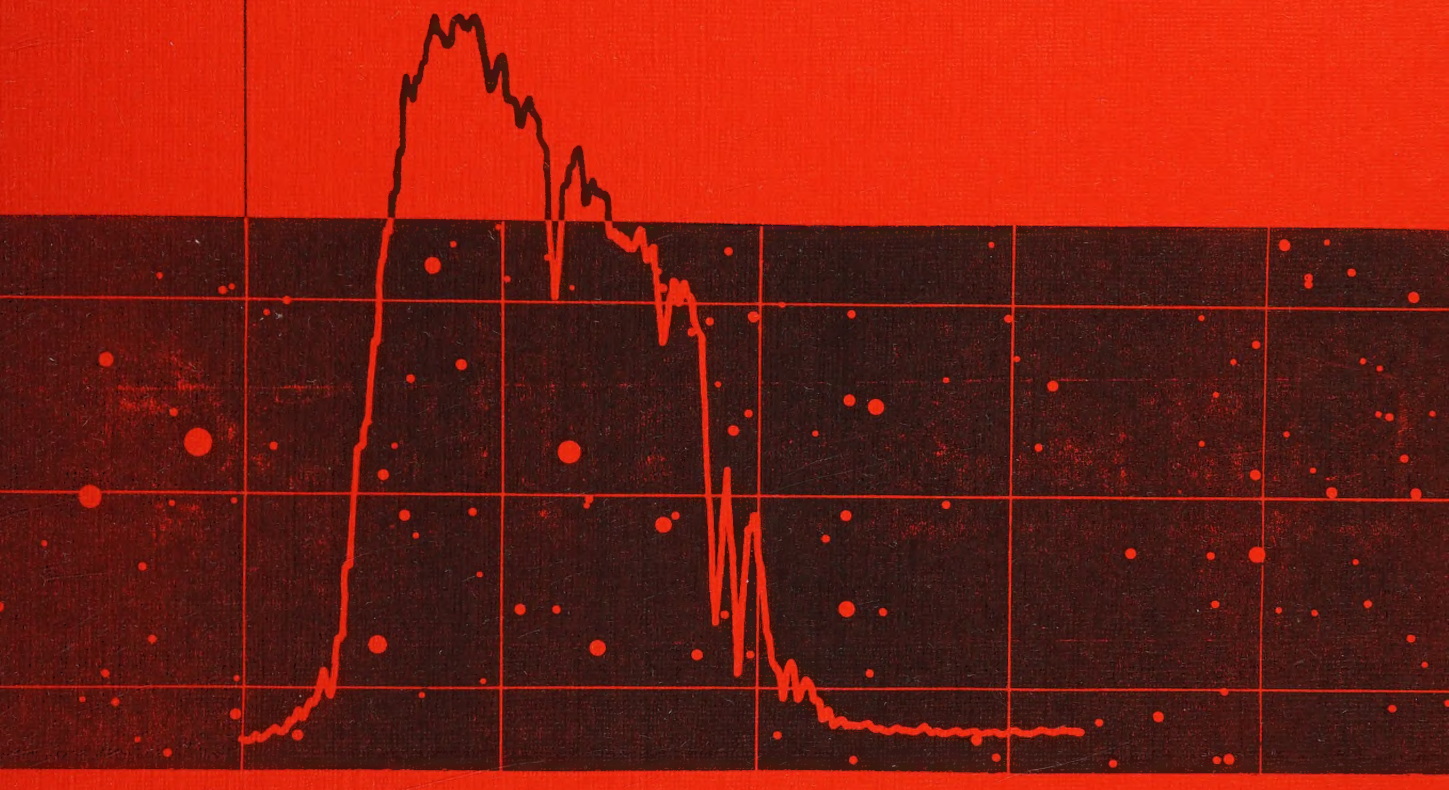
UPPSALA ASTRONOMICAL OBSERVATORY
REPORT No. 11



A PHOTOMETRIC AND SPECTROPHOTOMETRIC INVESTIGATION IN A REGION AT THE SOUTH GALACTIC POLE

BY
PER-IVAR W. ERIKSSON

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COVER DESIGN: PER OLOW KARLSSON
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SUMMARY

A region at the South Galactic Pole has been investigated with the aid of photoelectric and photographic broad-band and narrow-band photometry. The photoelectric measurements are complete to V = 10.75 mag over a field of 40 square degrees, and the photographic photometry in a smaller region (12 sq. degrees) reaches V $\approx$16 mag.

The mean colour excess in B-V is found to be 0.04 mag for stars more distant than 250 pc.

Space densities are computed for late-type giants, gG8 - gK2, and for main sequence stars with absolute visual magnitudes, M_V, between +2 and +8. Space densities for stars in the solar neighbourhood are determined from bright stars over the whole sky.

Distributions of velocities perpendicular to the galactic plane are determined from radial velocities and proper motions of bright stars.

The galactic force law, K_z, is derived from late-type giants and dwarfs, $4 < M_V \leq 5$, and shows a sharp maximum at about 800 pc.

The local mass density is found to be 0.10 $M_\odot/pc^3$.

Key-words: South Galactic Pole - photometry - interstellar absorption - stellar space densities - galactic force law.

1. INTRODUCTION

The aim of the present investigation is to determine space densities for stars of different spectral classes in the direction of the South Galactic Pole (SGP).

A region $0^h\ 44^m < \alpha_{1950} < 1^h\ 12^m$

$-33^\circ < \delta_{1950} < -27^\circ$

has been covered with photometric and spectrophotometric plates, and, moreover, all stars in the region brighter than $V = 10^m.5$ have been measured photoelectrically in the UBV system.

This paper presents the B,V photometry and the spectrophotometric data in the Uppsala system for the stars within $-31^\circ < \delta < -29^\circ$ of the region and the photoelectric data for the whole area.

Velocity distributions are derived for two spectral groups, late-type dwarfs and late-type giants, which give a possibility to compute the force perpendicular to the galactic plane and the mass density near the sun.

The editing of the catalogues and most of the calculations were made with the aid of the IBM 370 computer of the University of Uppsala.

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2. THE PHOTOELECTRIC DATA

2.1 The measurements.

A photoelectric sequence established by B.J. Bok and P.F. Bok (1961) in Kapteyn's S.A. 141 was originally used for the calibration of the photographic plates. Since it soon became evident that the magnitude scale and zero-points could not be transferred over the whole region with sufficient accuracy, and that the plates failed to give accurate magnitudes for the brightest stars, $V < 11$, (see below), it was found highly desirable to get photoelectric magnitudes and colours for all the bright stars and also for some calibration stars distributed over the whole SGP-region.

The photoelectric measurements were made at the European Southern Observatory, La Silla, Chile, during October and the beginning of November, 1972, with the ESO 1 m photometric telescope (8 nights) and the ESO 50 cm telescope (14 nights). The 1 m telescope was equipped with a photon-counting device and the 50 cm telescope with a DC-amplifier and a Brown recorder. Secondary standards were established in the SGP-region and connected to E-region standards (Cousins and Stoy 1962, Cousins 1967, 1973). Extinction coefficients and transformations to the UBV system were determined separately each night. At the 1 m telescope a Čerenkov source was measured every hour to check the stability of the photometer. All reductions were made in Uppsala using a FORTRAN programme written by Ekedahl.

The photographic measurements had been carried out to about $V = 17$. To $V = 15.7$ Bok's sequence was used. To establish the magnitude scale for the fainter end, some faint stars were selected and checked on the Palomar Sky Atlas to be free from adjacent objects. These stars were measured "off-set" with an integration time of 10 seconds, otherwise times of 1 - 5 seconds were used. The faintest star measured is No. 215 ($V = 17.25$, $B-V = 1.41$).

Table 1 lists the E-region standards used, their standard values in the column "Primary standards", and the UBV-values derived from the observations with the 50 cm and 1 m telescopes; n is the number of nights. The stars with PE-numbers refer to Table 3 and are the SGP secondary standard stars.

The difference in V found for PE 130 between the observations with the two telescopes cannot be explained by the errors of measurement.

Table 1.

NO	Primary standards			50 cm				1 m			
	V	B-V	U-B	V	B-V	U-B	n	V	B-V	U-B	n
E1-23	8.69	.88	.505					8.765	.910	.418	1
26	7.825	.835	.495	7.833	.821	.466	14	7.832	.832	.452	8
31	6.965	1.165	1.26	6.965	1.164	1.262	1				
32	6.955	1.49	1.825	6.954	1.496	1.818	14	6.952	1.496	1.820	8
46	7.845	-.095	-.36	7.852	-.086	.364	14	7.852	-.081	-.375	8
70	7.57	1.02	.70	7.570	1.023	.732	1				
E2-10	8.01	.47	-.095	8.009	.471	-.077	9	8.013	.481	-.113	5
26	6.93	.945	.700	6.917	.940	.702	1	6.927	.932	.701	4
28	7.225	1.02	.85	7.223	1.018	.848	6	7.236	1.008	.841	5
31	7.60	1.305	1.425	7.581	1.300	1.425	9	7.591	1.295	1.410	5
E3-18	8.565	.29	.03					8.575	.307	.060	2
32	8.155	.965	.72	8.169	.970	.743	5	8.175	.955	.704	6
37	7.16	1.08	.66	7.157	1.071	.880	2	7.163	1.069	.878	1
51	6.82	-.065	-.23	6.826	-.070	-.215	1	6.820	-.088	-.160	1
89	7.21	-.175	-.745	7.212	-.164	-.763	9	7.201	-.170	-.774	6
93	7.16	1.55	1.81	7.168	1.551	1.853	8	7.161	1.553	1.851	5
E4-25	7.57	.485	.03	7.583	.486	.035	1	7.565	.504	.021	1
27	7.675	.99	.845	7.658	1.024	.807	2	7.666	1.010	.826	1
29	6.70	1.225	1.325	6.693	1.239	1.320	4	6.685	1.228	1.328	4
75	7.305	.665	.200	7.298	.672	.181	1	7.294	.670	.177	4
80	7.03	1.01	.87	7.037	1.008	.853	2	7.019	1.010	.859	4
99	7.13	-.13	-.56	7.139	-.122	-.595	4	7.133	-.135	-.584	2
100	7.62	-.155	-.63					7.617	-.139	-.675	3
E8-30	6.96	1.50	1.85	6.964	1.508	1.852	9	6.960	1.510	1.841	3
31	7.55	.95	.62	7.555	.963	.623	1	7.558	.955	.624	2
70	7.175	-.08	-.23	7.175	-.074	-.187	9	7.166	-.087	-.176	3
E9- 1	8.05	.055	.08	8.057	.053	.105	4	8.058	.061	.128	8
24	6.905	.985	.78	6.895	.989	.770	6	6.903	.976	.777	6
31	7.24	1.46	1.75	7.763	1.446	1.746	12	7.241	1.462	1.734	8
48	6.91	-.045	-.085	6.925	-.036	-.079	10				
PE 40				7.577	.317	.068	14	7.582	.316	.069	5
130				7.170	.918	.698	14	7.145	.937	.676	4
302				8.106	.836	.323	14	8.108	.850	.279	8
318								9.825	.258	.047	3
411				8.199	.486	.006	8	8.200	.493	-.020	4
449				9.104	1.240	1.189	1	9.116	1.246	1.156	8

Table 2.

Mean error of a single photoelectric measurement.

Instrument	Interval of magnitude V	V	B-V	U-B
1 m telescope	- 13	.01	.01	.01
	13 - 14	.01	.01	.02
	14 - 15	.03	.02	.04
	15 - 16	.04	.03	.07
	16 - 17	.07	.08	.10
	17 -	.13	.12	--
50 cm telescope	- 8	.01	.01	.01
	8 - 10	.01	.01	.02
	10 -	.02	.01	.03

2.2 Comparison with published data.

Among the stars in Table 3 are 49 stars observed by Bok and Basinski (1964) and 22 stars observed by Lloyd Evans (1970). A comparison gives the following results:

$$\Delta V_{BB-PIE} = -0.03 \pm 0.005 \quad (48 \text{ stars}) \quad (1)$$

$$\Delta (B-V)_{BB-PIE} = -0.007 \pm 0.004 \quad (49 \text{ stars}) \quad (2)$$

The secondary standard star PE 411 is excluded in the comparison of V. ($V_{PIE} = 8.20$, while $V_{BB} = 8.09$).

$$\Delta V_{TLE-PIE} = -0.03 \pm 0.002 \quad (22 \text{ stars}) \quad (3)$$

$$\Delta (B-V)_{TLE-PIE} = -0.003 \pm 0.003 \quad " \quad (4)$$

$$\Delta (U-B)_{TLE-PIE} = +0.012 \pm 0.007 \quad " \quad (5)$$

According to these comparisons it would seem as if the magnitudes V_{PIE} are systematically 0.03 magnitudes too faint. However, a comparison made by Evans for a slightly different sample gives

$$\Delta V_{BB-TLE} = +0.041 \pm 0.010 \quad (6)$$

All colours agree satisfactorily.

2.3 Table 3.

The table contains all stars brighter than V = 10.50 but one very bright star (HD 5737).

Column 1	NO	Current number.
Column 2	HD/CD	Number in the Henry Draper Catalogue or the Cordoba Durchmusterung.
Column 3	R.A. DECL.	Equatorial coordinates for the epoch 1950,0, computed from rectangular coordinates measured on the photographic plates.
Column 4	V B-V U-B	Magnitude and colours in the UBV system.
Column 5	N1 N2	N1 = number of measurements with the 50 cm, N2 = number of measurements with the 1 m telescope. For the secondary standard stars the number of nights is given in Table 1.
Column 6	R	Remarks: See end of Table.

NO	HD/CD	R.A. (1950.0)	DECL.	V	B-V	U-B	N1	N2	R
1	-32 282	0 43 13	-32 33.2	10.94	1.21	1.32	1	1	
2	HD 4356	0 43 16	-33 26.3	10.22	0.64	0.10		2	
3	HD 4390	0 43 31	-30 59.0	7.82	0.54	0.04	2		
4	HD 4417	0 43 43	-33 33.5	10.30	0.72	-0.08		1	
5	HD 4416	0 43 44	-32 17.0	8.98	1.17	1.10	2		
6	HD 4415	0 43 47	-30 57.5	9.44	0.96	0.73	2		
7	HD 4427	0 43 49	-31 56.8	9.88	0.67	0.23	2		
8	-30 223	0 43 50	-29 43.1	12.10	0.70	0.12		2	
9	-30 225	0 44 00	-30 20.0	12.07	0.72	0.22		2	
10	HD 4453	0 44 01	-31 53.3	9.84	1.28	1.43	2		
11	-29 218	0 44 05	-28 40.5	9.90	0.61	0.08	2		
12	HD 4452	0 44 05	-28 49.5	9.14	0.66	0.09	2		
13	HD 4454	0 44 05	-32 42.5	9.89	0.58	0.07	2		
14	HD 4455	0 44 05	-33 25.1	8.96	0.46	-0.03	2		
15	-30 227	0 44 09	-29 36.2	9.87	0.53	0.04	2		
16	HD 4471	0 44 11	-30 27.9	6.80	1.23	1.35	2		
17	-32 292	0 44 11	-32 23.4	10.43	0.47	0.01	2		
18		0 44 12	-29 19.1	13.53	1.01	0.69		2	
19	HD 4493	0 44 21	-32 31.1	9.07	1.08	0.97	2		
20	-28 238	0 44 31	-27 50.0	10.13	0.94	0.61	2		
21	-30 230	0 44 32	-30 27.3	10.34	0.30	0.08	2		
22		0 44 35	-28 58.3	12.46	0.67	0.21		2	
23	-31 288	0 44 36	-30 37.8	10.15	1.17	1.20	2		
24		0 44 38	-29 42.6	14.76	1.37	1.22		2	
25	-32 296	0 44 38	-32 10.1	10.83	0.87	0.51	1		
26		0 44 39	-29 43.8	15.44	1.46	0.86		2	
27	HD 4530	0 44 41	-29 24.6	9.07	0.51	0.02	2		
28		0 44 44	-28 00.1	13.10	0.77	0.38		2	
29	-32 298	0 44 50	-32 15.4	12.04	0.57	-0.06		2	
30	-28 239	0 44 54	-28 34.5	10.08	0.40	-0.03	2		
31	HD 4566	0 44 55	-29 46.3	9.79	0.71	0.24	2	2	
32	HD 4573	0 45 04	-31 23.8	8.37	1.37	1.61	3		
33	-29 222	0 45 13	-29 17.4	10.54	1.33	1.52	2		
34	-27 243	0 45 14	-27 14.9	9.19	0.37	0.02	2		
35	HD 4596	0 45 14	-32 43.8	9.13	0.45	0.03	2		
36	HD 4595	0 45 16	-31 37.6	7.10	1.39	1.63	2		
37	-29 223	0 45 19	-28 49.3	12.12	0.54	0.00		2	
38	-33 302	0 45 27	-33 01.7	10.53	0.93	0.45	1		
39		0 45 29	-29 21.9	13.98	0.63	0.05		2	
40	HD 4623	0 45 30	-29 37.0	7.58	0.32	0.07	76	22	*
41	HD 4632	0 45 33	-32 36.5	8.88	1.11	1.06	2		
42		0 45 40	-29 06.1	14.89	1.50	1.12		2	
43	-28 245	0 45 43	-28 01.7	10.85	1.07	1.06	1		
44	HD 4642	0 45 43	-31 02.2	9.26	0.56	0.02	2		
45	-30 242	0 45 45	-29 50.5	12.17	0.74	0.01		2	
46	-27 249	0 45 49	-27 10.5	10.28	0.52	0.03	2		
47	-28 246	0 45 51	-28 21.7	10.07	0.47	-0.05	2		
48		0 45 52	-27 26.4	13.12	0.46	-0.07		2	
49	-32 305	0 45 52	-31 51.7	10.32	0.60	0.08	2		
50		0 45 53	-32 23.6	13.04	0.71	0.21		2	

NO	HD/CD	R.A. (1950.0)	DECL.	V	B-V	U-B	N1	N2	R
51	HD 4660	0 45 58	-31 53.4	9.08	0.73	0.23	2		
52	-28 248	0 45 59	-27 48.6	10.63	0.59	0.05	2		
53	-30 244	0 46 05	-29 43.8	10.46	1.11	1.02	2		
54		0 46 08	-27 27.1	14.81	0.27	0.12		2	
55	-29 226	0 46 15	-28 44.6	10.25	1.27	1.42	2		
56	HD 4691	0 46 15	-28 46.1	6.76	0.35	-0.01	2		
57	HD 4692	0 46 15	-31 30.9	9.82	1.07	0.93	2		
58	-28 249	0 46 16	-28 07.1	10.76	0.73	0.36	1		
59	-27 253	0 46 19	-26 54.4	10.64	1.03	0.82	2		
60		0 46 26	-29 24.4	14.32	0.73	0.12		2	
61		0 46 27	-30 09.0	13.42	0.46	-0.09		2	
62		0 46 27	-32 50.9	13.23	0.77	0.30		2	
63	-29 227	0 46 29	-28 41.1	11.09	0.47	-0.07	1		
64		0 46 29	-30 35.7	14.09	0.85	0.42		2	
65		0 46 31	-27 59.7	14.21	0.70	0.09		2	
66	-30 248	0 46 35	-29 48.5	10.69	0.31	0.08	2		
67		0 46 39	-27 37.8	12.26	0.74	0.10		2	
68		0 46 41	-29 23.0	15.04	0.64	0.01		2	
69	-31 300	0 46 49	-30 54.1	10.08	0.74	0.29	2		
70	-30 250	0 46 50	-30 31.7	10.98	0.60	0.04	2		
71	-32 318	0 46 55	-32 24.6	10.49	0.56	-0.05	2		
72	HD 4763	0 46 57	-27 52.6	8.54	0.44	-0.05	2		
73	-28 255	0 47 01	-27 50.2	10.56	0.63	0.15	2		
74	-29 228	0 47 05	-29 01.9	11.93	0.52	-0.09		2	
75	-29 230	0 47 08	-29 30.2	10.59	0.87	0.49	2		
76	-28 256	0 47 11	-28 12.0	10.96	1.11	1.07	1		
77	HD 4792	0 47 14	-32 07.4	9.47	0.56	0.06	2		
78		0 47 16	-28 42.8	13.20	1.18	1.09		2	
79	-32 323	0 47 22	-32 10.5	11.11	1.02	1.02	1		
80		0 47 23	-29 32.0	15.64	0.91	0.64		2	
81		0 47 25	-29 45.0	12.95	0.80	0.29		2	
82	-27 260	0 47 30	-27 05.6	10.10	0.62	0.04	2		
83	-28 257	0 47 31	-27 58.0	10.26	1.59	1.82	2		
84	-31 303	0 47 33	-30 51.9	10.80	0.42	0.00	2		
85		0 47 34	-32 14.1	14.20	0.61	0.00		2	
86	-29 232	0 47 42	-29 16.6	9.41	1.40	1.59	2		
87	-33 314	0 47 42	-32 47.4	10.29	0.56	0.06	1		
88	-29 233	0 47 45	-28 45.9	10.92	0.54	-0.03	2		
89		0 47 45	-29 54.6	14.86	1.07	0.81		2	
90	-32 327	0 47 49	-31 36.2	10.42	0.93	0.76	2		
91	-29 234	0 47 51	-29 33.2	11.50	0.47	-0.09		2	
92	-28 258	0 47 54	-27 42.5	9.60	0.88	0.48	2		
93	-32 330	0 47 59	-32 04.2	10.31	0.73	0.27	2		
94		0 48 09	-28 53.4	15.93	0.51	-0.25		2	
95	HD 4876	0 48 10	-27 42.4	9.45	0.36	0.08	2		
96	-31 307	0 48 10	-31 35.1	10.22	0.99	0.74	2		
97	-32 332	0 48 14	-32 15.7	10.98	0.53	-0.09		1	
98	-27 266	0 48 30	-27 26.9	10.35	0.53	0.01	2		
99	-29 240	0 48 32	-29 05.9	11.69	0.66	0.06		2	
100	-31 309	0 48 34	-30 38.3	10.29	0.65	0.08	2		

NO	HD/CD	R.A. (1950.0)	DECL.	V	B-V	U-B	N1	N2	R
101	-30 256	0 48 36	-29 43.7	11.52	0.54	-0.05		2	
102	-33 317	0 48 39	-32 48.1	9.98	0.91	0.55	2		
103	HD 4954	0 48 51	-29 57.7	9.48	1.17	1.07	2		
104	-28 262	0 48 56	-27 39.5	10.37	1.08	0.96	2		
105	HD 4983	0 49 11	-31 15.4	9.19	0.53	-0.02	2		
106	-32 336	0 49 15	-31 53.9	10.62	0.67	0.19	2		
107	-27 270	0 49 19	-27 07.2	11.19	0.47	0.03	1		
108	HD 5000	0 49 22	-28 55.4	8.21	1.14	1.15	2		
109	-30 260	0 49 25	-29 53.4	10.96	1.06	0.93	1		
110	HD 5024	0 49 30	-31 13.8	9.22	0.34	0.07	2		
111	-33 322	0 49 32	-32 51.8	9.81	1.30	1.54	2		
112	HD 5023	0 49 33	-27 53.8	9.09	0.83	0.47	2		
113	-31 320	0 49 34	-30 51.6	10.79	0.52	-0.00	1		
114	-29 246	0 49 43	-29 02.1	10.71	0.56	0.01	2		
115	HD 5060	0 49 44	-32 26.1	9.51	0.52	0.01	2		
116		0 49 54	-29 43.6	12.21	0.51	-0.10	2		
117	-28 268	0 49 57	-27 47.0	10.95	0.62	0.17	1		
118		0 50 02	-30 35.9	12.07	0.46	-0.14		2	
119	-32 346	0 50 03	-32 23.5	10.39	0.97	0.72	2		
120	-29 247	0 50 04	-29 24.8	10.00	1.08	0.97	2	1	
121	HD 5099	0 50 07	-31 53.9	9.67	0.95	0.66	2		
122	-33 328	0 50 08	-32 40.5	10.89	0.56	-0.02		1	
123		0 50 12	-28 51.8	14.16	0.57	-0.08		2	
124	-30 263	0 50 13	-29 58.4	10.71	0.44	-0.08	1	2	
125	-28 273	0 50 17	-27 38.7	10.32	0.96	0.62	2		
126		0 50 23	-28 59.4	12.94	0.50	-0.12		2	
127	-28 274	0 50 25	-27 42.0	10.01	0.43	-0.05	2		
128	-27 280	0 50 26	-27 10.7	10.91	0.61	0.10	2		
129	-30 264	0 50 33	-29 50.9	11.14	1.04	0.82	3		
130	HD 5133	0 50 34	-30 37.7	7.17	0.92	0.69	75	16	*
131	HD 5134	0 50 35	-32 55.8	9.11	0.56	0.06	2		
132	-31 326	0 50 38	-30 40.5	11.03	0.43	0.10	1		
133	-31 327	0 50 38	-31 11.0	10.03	0.97	0.71	2		
134		0 50 40	-29 13.0	14.99	0.59	-0.05		2	
135		0 50 47	-29 54.4	14.86	1.22	1.16		2	
136	-30 266	0 50 52	-29 38.7	11.78	0.63	0.07		2	
137		0 51 02	-28 59.1	13.30	1.52	1.74		2	
138	HD 5204	0 51 13	-29 13.8	9.70	0.48	0.03	2		
139		0 51 22	-29 39.8	13.42	0.59	-0.09		2	
140	HD 5242	0 51 23	-32 01.3	9.73	1.05	0.89	2		
141	HD 5227	0 51 24	-28 49.0	8.56	1.33	1.51	2		
142	HD 5228	0 51 24	-30 26.9	8.99	0.43	-0.02	2		
143	-29 256	0 51 27	-28 56.7	12.16	0.52	-0.07		2	
144	HD 5252	0 51 29	-32 30.5	9.25	0.68	0.19	2		
145	HD 5241	0 51 30	-29 04.6	8.58	1.51	1.89	2		
146	-27 289	0 51 34	-27 02.1	10.30	0.71	0.26	2		
147		0 51 34	-29 25.6	15.24	0.73	0.10		3	
148	-28 280	0 51 35	-28 22.4	10.35	1.17	1.14	2		
149	HD 5271	0 51 40	-32 36.4	8.06	0.40	0.10	2		
150	-29 259	0 51 41	-29 01.4	11.08	0.21	0.10	2		

NO	HD/CD	R.A. (1950.0)	DECL.	V	B-V	U-B	N1	N2	R
151		0 51 41	-30 34.3	13.96	0.63	-0.01		2	
152	HD 5270	0 51 46	-31 08.0	10.08	0.51	0.03	2		
153	-33 338	0 51 46	-32 44.2	9.87	0.98	0.73	2		
154		0 51 59	-30 07.2	13.02	0.64	0.11		2	
155	-30 271	0 51 60	-29 43.0	10.83	0.83	0.45	2		
156	-31 342	0 52 01	-31 00.0	10.76	0.69	0.25	2		
157	HD 5301	0 52 09	-31 54.9	9.23	0.72	0.32	2		
158	-32 361	0 52 17	-32 15.4	10.08	0.55	-0.05	2		
159	HD 5331	0 52 27	-32 53.4	9.16	0.60	0.15	2		
160	-32 362	0 52 33	-31 45.8	10.72	1.01	0.78	2		
161	-31 345	0 52 35	-31 17.7	10.92	0.76	0.36	1		
162	-29 264	0 52 39	-28 50.5	12.30	0.65	0.07		2	
163	-32 365	0 52 44	-32 35.1	12.09	0.60	-0.10		2	
164	-31 346	0 52 53	-30 47.8	10.81	0.43	0.03	1		
165		0 53 01	-28 57.2	13.84	0.59	-0.13		1	
166		0 53 16	-31 58.6	14.08	0.38	-0.08		1	
167	-29 266	0 53 18	-28 50.6	11.11	0.90	0.61	2		
168	HD 5424	0 53 19	-28 09.8	9.46	1.15	0.84	2		
169	HD 5425	0 53 23	-29 56.9	9.49	1.14	1.12	2		
170		0 53 27	-30 12.9	13.35	1.03	0.71		2	
171	HD 5445	0 53 30	-28 02.8	8.11	1.85	2.01	2		
172	-28 289	0 53 32	-27 43.4	11.05	0.72	0.23	1		
173	-29 267	0 53 32	-29 35.4	10.80	0.91	0.52	2		
174	-29 268	0 53 38	-29 35.2	11.15	0.65	0.13	1	1	
175	-30 278	0 53 39	-29 41.0	10.83	0.61	0.13	2		
176	-30 279	0 53 39	-29 45.9	10.18	0.49	-0.01	1	2	
177	-28 292	0 53 53	-27 44.0	10.95	1.37	1.48	1	1	
178	HD 5496	0 53 58	-31 27.2	10.57	-0.05	-0.19	1		
179	-29 270	0 54 01	-28 55.6	10.25	0.87	0.47	2		
180	-29 271	0 54 03	-28 42.0	10.76	0.61	0.05	1	2	
181	-31 364	0 54 04	-30 54.6	10.99	0.69	0.18	1		
182	-27 303	0 54 05	-27 29.9	10.29	0.58	0.07	2		
183		0 54 06	-29 36.7	12.76	0.72	0.21		2	
184	-27 304	0 54 17	-27 30.2	10.32	1.25	1.42	2		
185	-30 281	0 54 22	-29 41.7	11.56	0.87	0.49		2	
186	HD 5546	0 54 30	-30 01.8	10.22	0.22	0.14	2		
187	HD 5559	0 54 35	-32 08.8	9.44	1.01	0.81	2		
188	-30 285	0 54 37	-29 48.0	10.40	1.13	1.09	2		
189	-32 375	0 54 38	-32 14.9	11.00	1.32	1.49		2	
190	-30 286	0 54 39	-30 02.0	10.32	1.02	0.78	2		
191	HD 5567	0 54 44	-29 37.9	9.54	0.87	0.50	2		
192	-31 368	0 54 46	-31 17.8	9.63	1.33	1.44	2		
193		0 54 56	-29 08.4	14.93	0.67	0.09		1	
194		0 54 56	-30 08.3	14.70	0.08	0.13		2	
195	-27 306	0 55 03	-27 23.1	12.41	0.92	0.60		2	
196		0 55 07	-29 40.9	14.26	0.57	-0.08		1	
197	-31 373	0 55 07	-30 41.0	10.44	0.52	0.10	2		
198	-30 288	0 55 08	-30 16.2	9.90	0.88	0.44	2		
199		0 55 11	-33 04.0	14.07	0.59	-0.12		2	
200	-32 381	0 55 14	-32 06.8	10.91	1.51	1.94	2	1	

NO	HD/CD	R.A.	DECL.	V	B-V	U-B	N1	N2	R
		(1950.0)							
201	-29 274	0 55 16	-29 28.5	10.97	0.51	0.03	2		
202	HD 5631	0 55 16	-30 45.5	8.39	1.37	1.53	2		
203	HD 5645	0 55 25	-28 29.3	9.56	0.46	-0.04	2		
204	-28 298	0 55 27	-28 12.9	10.70	1.00	0.87	2		
205	HD 5644	0 55 27	-28 19.9	9.22	1.50	1.86	2		
206	-30 291	0 55 29	-29 47.8	9.92	1.25	1.27	2		
207	-31 377	0 55 32	-30 38.1	11.70	0.61	0.14		2	
208	-30 293	0 55 38	-30 17.6	12.47	0.78	0.33		2	
209	-28 301	0 55 40	-28 16.9	10.73	0.58	0.03	2		
210	-29 278	0 55 40	-29 13.7	10.80	0.79	0.44	2		
211	-33 357	0 55 42	-33 13.9	12.15	0.74	0.18		2	
212		0 55 43	-32 38.0	13.22	0.66	0.09		2	
213	-30 294	0 55 45	-30 07.5	11.04	1.18	1.17	1	1	
214	HD 5684	0 55 52	-27 21.8	8.40	1.26	1.41	2		
215		0 55 58	-29 12.3	17.25	1.41			6	
216	-29 281	0 56 01	-29 11.1	10.55	1.10	0.92	2		
217	-31 379	0 56 09	-30 42.3	10.87	0.60	0.07	1		
218	-32 392	0 56 14	-32 35.5	10.46	0.43	-0.01	2		
219	HD 5736	0 56 15	-27 05.1	9.77	0.60	0.09	2		
220	-30 298	0 56 20	-30 22.2	10.79	0.61	-0.05	2		
221		0 56 30	-29 50.7	15.34	0.61	0.09		1	
222	-29 282	0 56 32	-29 33.2	11.67	0.76	0.29		2	
223	HD 5769	0 56 37	-29 40.2	9.33	0.19	0.11	2		
224		0 56 40	-27 46.3	13.82	0.59	-0.02		2	
225		0 56 42	-29 06.6	13.24	0.85	0.34		2	
226	-33 362	0 56 45	-32 42.5	10.77	0.71	0.15	2		
227	-29 283	0 56 46	-28 44.4	12.02	0.80	0.36		2	
228	-33 364	0 56 48	-33 21.3	10.41	1.03	0.85	2		
229		0 56 51	-30 11.5	12.31	0.78	0.38		2	
230	-31 384	0 56 53	-31 29.4	10.92	0.69	0.17	1		
231		0 56 56	-27 27.0	13.99	0.67	0.07		1	
232	HD 5815	0 57 00	-30 51.2	9.39	0.44	0.02	2		
233		0 57 02	-29 20.8	15.91	0.65	-0.15		2	
234	HD 5824	0 57 03	-32 14.1	9.65	0.32	-0.00	2		
235	-28 306	0 57 04	-28 04.2	10.60	1.09	0.99	2		
236	-29 285	0 57 05	-29 59.3	10.76	0.61	0.06	2		
237	-33 365	0 57 06	-33 22.4	9.83	0.65	0.09	2		
238	-30 301	0 57 10	-30 00.9	11.05	0.70	0.19	2		
239	-30 302	0 57 15	-29 50.0	11.50	0.48	-0.06		2	
240	-27 317	0 57 16	-27 01.9	11.14	0.17	0.15	1		
241	HD 5869	0 57 21	-31 36.3	7.51	1.45	1.83	2		
242	-29 287	0 57 28	-28 46.1	12.31	0.66	0.02		2	
243	HD 5875	0 57 29	-30 37.9	9.82	0.51	0.02	2		
244	HD 5876	0 57 32	-31 32.4	9.24	0.74	0.35	2		
245	HD 5886	0 57 33	-30 41.9	9.60	0.55	0.03	2		
246	-33 371	0 57 38	-32 53.6	10.03	0.61	0.08	2		
247	-31 394	0 57 44	-30 58.7	10.71	1.43	1.62	2	1	
248	-33 372	0 57 47	-33 16.9	10.15	0.43	0.02	2		
249	-30 303	0 57 49	-29 56.3	11.03	0.56	0.03	2		*
250	-34 380	0 57 50	-33 36.9	10.52	0.97	0.72	2		

NO	HD/CD	R.A.	DECL.	V	B-V	U-B	N1	N2	R
		(1950.0)							
251	-29 288	0 57 55	-29 17.2	10.89	0.72	0.23	2		
252	HD 5922	0 58 01	-27 10.6	10.06	0.60	0.08	2		
253		0 58 01	-29 59.9	12.68	1.07	0.91		2	
254	-31 397	0 58 10	-30 59.4	10.82	0.62	0.09	1		
255	HD 5949	0 58 15	-27 23.5	10.06	0.62	0.16	2		
256	-31 398	0 58 15	-31 28.7	11.05	1.02	0.91	1		
257		0 58 17	-31 28.6	11.48	0.62	0.18	1		
258	HD 5962	0 58 22	-27 29.1	9.52	1.41	1.63	2	1	
259	-31 400	0 58 24	-31 01.6	10.30	0.46	-0.07	2		
260	-32 400	0 58 32	-32 29.7	11.12	0.51	-0.09		1	
261	-33 375	0 58 39	-32 59.2	9.39	1.12	1.07	2		
262	-29 297	0 58 46	-29 21.9	10.36	0.72	0.31	2		
263	-28 312	0 58 50	-28 03.8	10.57	0.58	0.01	2		
264	HD 6023	0 58 51	-29 09.2	9.34	0.86	0.38	2		
265	-31 404	0 58 57	-30 52.8	10.67	0.48	-0.00	1		
266	HD 6040	0 58 58	-32 08.1	9.98	0.60	0.08	2		
267	-33 378	0 58 58	-32 43.5	10.78	0.61	0.04	2		
268	HD 6041	0 58 60	-33 37.7	7.70	1.40	1.58	2		
269	HD 6054	0 59 05	-27 43.2	9.21	1.51	1.45	2	1	
270	HD 6068	0 59 12	-31 12.4	9.68	0.44	-0.03	2		
271	-33 379	0 59 12	-33 27.3	9.82	1.22	1.23	2		
272	-27 333	0 59 23	-27 11.8	10.99	1.07	0.94	1		
273	-29 300	0 59 23	-28 51.1	10.91	0.71	0.22	2		
274	-29 301	0 59 23	-28 53.6	11.04	0.41	-0.00	2		
275		0 59 25	-29 27.6	12.56	0.74	0.25		2	
276	-29 302	0 59 32	-29 26.8	11.47	0.50	-0.04	1	1	
277	HD 6104	0 59 36	-30 15.4	9.34	0.88	0.55	2		
278	-30 317	0 59 40	-30 23.5	11.76	1.08	0.84		2	
279	HD 6138	0 59 50	-31 04.1	9.57	1.05	0.86	2		
280	HD 6139	0 59 50	-31 53.5	8.81	0.51	0.02	2		
281	-30 318	0 59 51	-30 35.1	11.09	0.49	-0.07	1	1	
282	-33 382	0 59 54	-33 11.8	10.44	0.45	-0.02	2		
283	-31 409	0 59 56	-31 31.7	10.80	0.44	-0.06	1		
284	-31 410	0 59 57	-30 52.4	9.57	1.29	1.46	2		
285	HD 6167	0 59 57	-32 22.5	9.80	1.05	0.92	2		
286	-29 305	1 00 01	-29 21.3	10.96	0.98	0.74	1	1	
287	HD 6166	1 00 01	-30 39.6	9.19	1.07	0.94	2		
288	HD 6178	1 00 03	-31 49.3	5.49	0.10	0.12	2		
289	-31 412	1 00 05	-31 29.5	10.42	0.32	0.08	2		
290	-33 384	1 00 10	-33 25.1	10.66	1.07	0.96	2		
291		1 00 18	-29 08.8	13.04	0.59	-0.05		1	
292	HD 6196	1 00 21	-27 15.5	10.09	0.47	-0.05	2		
293		1 00 21	-29 28.2	14.00	1.48	1.50		1	
294	HD 6206	1 00 25	-30 31.3	9.72	0.53	0.08	2		
295	HD 6218	1 00 31	-27 53.2	9.84	0.78	0.45	2		
296	-30 320	1 00 36	-29 48.7	11.44	0.79	0.44	2		
297	-28 319	1 00 42	-28 00.0	10.48	0.68	0.21	2		
298	-29 308	1 00 44	-29 11.2	10.91	0.64	0.05	1	1	
299	-30 321	1 00 46	-29 50.1	11.07	0.70	0.20	1	1	
300	HD 6255	1 00 48	-27 22.6	8.95	1.59	1.94	2		

NO	HD/CD	R.A.	DECL.	V	B-V	U-B	N1	N2	R
		(1950.0)							
301	HD 6270	1 00 49	-33 00.7	9.59	0.40	-0.02	2		
302	HD 6268	1 00 54	-28 08.9	8.11	0.84	0.31	72	46	*
303	HD 6269	1 00 54	-29 47.6	6.29	0.94	0.61	2		
304	-28 323	1 00 57	-28 13.7	10.38	0.44	-0.05	2		
305	-31 417	1 00 57	-30 37.9	12.06	0.55	-0.07		2	
306	HD 6289	1 01 02	-32 20.8	7.52	1.47	1.74	2		
307	-29 311	1 01 07	-28 55.4	10.84	0.65	0.16	1	1	
308		1 01 17	-28 00.3	13.07	0.47	-0.27		2	
309	HD 6307	1 01 20	-30 40.0	8.78	0.48	-0.01	2		
310	-29 312	1 01 21	-28 55.3	10.46	0.89	0.51		2	
311		1 01 22	-28 55.3	12.03	0.68	0.05		2	
312		1 01 28	-32 03.3	9.10	0.59	0.02	2		
313	-33 391	1 01 31	-33 29.6	10.71	0.54	0.03	2		
314	-28 329	1 01 36	-28 12.7	10.02	1.00	0.80	2		
315	-29 313	1 01 39	-29 19.7	10.47	1.32	1.50	2		
316	-30 328	1 01 41	-29 50.5	10.83	0.54	0.01	1	1	
317	HD 6339	1 01 42	-29 40.0	9.90	0.51	0.05	1	2	
318	HD 6365	1 01 53	-30 17.4	9.83	0.26	0.05		10	*
319	HD 6364	1 01 54	-27 25.4	9.63	0.30	0.07	2		
320	-29 316	1 01 58	-28 53.0	12.43	0.70	0.17		2	
321	-31 424	1 02 02	-30 40.2	11.76	0.66	0.09		1	*
322	-31 424	1 02 02	-30 40.2	11.54	0.57	0.06		1	*
323		1 02 06	-33 35.1	10.88	0.53	-0.08	2		
324	HD 6390	1 02 07	-30 03.9	8.78	0.49	0.09	2		
325	-32 416	1 02 08	-31 51.8	10.96	0.61	0.13	1		*
326	HD 6402	1 02 14	-30 45.4	8.24	0.50	0.01	2		
327	-31 427	1 02 21	-30 59.2	10.91	0.63	0.09	1	1	
328	-31 428	1 02 22	-31 33.1	11.95	0.94	0.56		1	
329	-29 318	1 02 25	-29 18.9	11.11	0.56	0.06	1	1	
330	-32 421	1 02 31	-32 08.1	10.95	0.52	0.08	1		
331	-32 423	1 02 35	-32 10.0	10.33	0.42	-0.03	2		
332		1 02 42	-27 42.9	11.95	1.14	1.14		2	
333	-28 334	1 02 54	-28 28.1	10.28	0.80	0.40	2		
334	-29 321	1 02 57	-29 27.5	10.97	0.85	0.45		1	
335		1 02 60	-29 25.3	10.31	1.02	0.42		3	
336	-27 351	1 03 02	-27 26.0	10.55	1.11	0.99	2		
337	HD 6485	1 03 02	-28 35.3	7.90	1.36	1.57	2	1	
338	-28 337	1 03 08	-27 39.9	10.87	1.08	0.90	1		
339	HD 6491	1 03 10	-27 13.4	8.12	0.38	0.05	2		
340	-29 324	1 03 10	-28 59.8	11.75	0.87	0.32		3	
341	-28 338	1 03 11	-27 48.8	10.58	1.02	0.83	2		
342	-31 434	1 03 15	-31 21.7	10.07	1.05	0.86	2		
343	HD 6519	1 03 21	-32 13.1	9.04	0.61	0.17	2		
344	-33 398	1 03 25	-33 18.1	12.49	0.56	-0.06		2	
345	HD 6532	1 03 32	-26 59.8	8.43	0.19	0.08	2		
346	-29 325	1 03 32	-29 09.4	11.02	1.01	0.72		1	
347	HD 6548	1 03 33	-27 51.7	9.82	0.44	-0.02	2		
348		1 03 34	-28 07.5	12.19	0.51	-0.04		2	
349	HD 6560	1 03 39	-32 07.3	8.12	1.10	1.06	2		
350	-27 356	1 03 46	-27 08.8	10.72	0.62	0.11	2		

NO	HD/CD	R.A.	DECL.	V	B-V	U-B	N1	N2	R
		(1950.0)							
351	-29 326	1 03 46	-28 56.9	10.39	0.98	0.67	2		
352	-31 442	1 04 02	-31 17.5	10.73	1.03	0.85	2		
353	-29 327	1 04 03	-29 17.8	10.81	0.46	-0.19	1	2	
354	-30 344	1 04 05	-29 37.4	10.41	0.51	0.02	2		
355	HD 6618	1 04 05	-32 53.6	9.46	1.20	1.29	2		
356	-31 443	1 04 14	-31 32.8	9.59	1.10	1.04	2		
357		1 04 22	-28 40.1	10.72	0.60	0.08	1		
358	-30 345	1 04 23	-30 25.4	10.42	0.66	0.19	2		
359		1 04 24	-32 36.1	14.56	0.44	-0.26		2	
360	-33 402	1 04 25	-33 35.7	10.82	0.57	0.10	2		
361		1 04 27	-30 34.2	13.10	0.45	-0.22		2	
362	-30 346	1 04 30	-30 14.1	11.92	0.98	0.66		2	
363		1 04 31	-30 29.4	12.63	1.00	0.86		2	
364	HD 6671	1 04 34	-33 01.3	10.27	0.52	-0.01	2		
365	-33 404	1 04 34	-33 16.1	10.77	0.48	0.00	2		
366		1 04 35	-28 23.7	13.21	0.25	0.04		2	
367	-30 347	1 04 36	-30 08.3	11.21	0.91	0.61	1	1	
368	HD 6670	1 04 38	-29 52.9	9.38	0.34	-0.01	2		
369	-33 407	1 04 39	-32 44.6	10.71	0.55	-0.04	2		
370		1 04 44	-29 41.5	13.45	0.87	0.39		2	
371	-33 408	1 04 52	-32 41.7	10.71	1.37	1.26	2		
372		1 04 56	-27 18.3	13.61	0.55	-0.12		2	
373	-31 445	1 04 58	-31 07.8	11.65	1.27	1.27		2	
374	HD 6724	1 05 11	-29 33.2	9.31	0.39	0.02	2		
375	HD 6725	1 05 12	-31 55.9	9.62	0.69	0.23	2		
376	HD 6723	1 05 13	-28 58.3	9.08	0.30	0.04	2		
377	-27 362	1 05 14	-27 32.8	10.56	0.45	0.03	2		
378	HD 6722	1 05 14	-27 59.3	7.98	1.08	0.91	2		
379	-32 441	1 05 16	-32 03.4	10.26	0.88	0.46	2		
380	-32 443	1 05 17	-31 51.3	10.61	0.91	0.61	2		
381	HD 6742	1 05 20	-33 04.8	8.12	1.19	1.30	2		
382		1 05 22	-30 52.8	13.64	0.76	0.27		1	
383	HD 6741	1 05 23	-27 15.2	8.82	1.06	0.93	2		
384	-29 336	1 05 24	-28 49.6	9.92	1.04	0.87	2	1	
385		1 05 28	-29 09.2	16.89	0.45	-0.18		5	
386		1 05 31	-29 45.7	14.10	0.72	0.11		2	
387		1 05 31	-29 47.8	13.40	0.68	0.04		3	
388	-33 410	1 05 31	-33 30.0	9.50	1.22	1.15	2		
389	-27 367	1 05 36	-27 05.0	10.49	0.47	-0.01	2		
390	-32 444	1 05 38	-31 38.0	10.74	0.71	0.19	2		
391		1 05 46	-32 10.8	13.18	0.96	0.76		2	
392	-33 411	1 05 49	-33 03.3	9.66	0.93	0.80	2		
393	-34 436	1 05 50	-33 37.4	10.33	1.48	1.79	1		
394	-29 337	1 05 52	-29 11.8	11.02	0.57	0.04	1	1	
395	HD 6807	1 05 56	-32 39.6	9.89	0.43	-0.06	2		
396	-33 413	1 05 57	-32 47.6	10.69	1.48	1.83	1	1	
397	-29 338	1 05 58	-29 25.6	12.04	0.99	0.72		2	
398	-32 448	1 05 58	-32 28.8	10.66	0.90	0.70	2		
399	HD 6817	1 06 03	-32 41.5	8.94	1.20	1.21	2		
400	-30 357	1 06 08	-30 17.1	10.89	0.50	0.01	2		

NO	HD/CD	R.A.	DECL.	V	B-V	U-B	N1	N2	R
		(1950.0)							
401	-31 453	1 06 19	-30 37.6	11.00	0.59	0.08	2		
402	-31 452	1 06 19	-30 42.3	10.19	0.58	0.03	2		
403	-29 344	1 06 21	-28 55.2	11.06	0.54	-0.01		1	
404	HD 6854	1 06 21	-32 25.7	8.04	1.15	1.13	2		
405	-28 352	1 06 22	-27 57.7	10.75	0.39	0.02	1		
406		1 06 22	-33 21.7	14.22	0.66	0.10		2	
407		1 06 23	-28 43.3	10.08	1.31	1.42	2		
408		1 06 24	-29 35.5	16.88	1.37	0.63		2	
409	-30 359	1 06 24	-30 27.6	11.82	1.02	0.85		2	
410		1 06 25	-29 54.6	16.08	0.59	-0.04		1	
411	HD 6868	1 06 29	-29 53.3	8.20	0.49	-0.01	19	22	*
412	HD 6880	1 06 35	-31 11.7	9.11	0.78	0.37	2		
413	-32 445	1 06 37	-32 19.6	10.95	0.48	-0.07	1	1	
414	-33 419	1 06 40	-33 25.6	12.05	0.59	0.03		1	
415	-31 457	1 06 45	-31 08.2	10.81	1.03	0.89	2		
416	HD 6906	1 06 51	-28 22.9	9.88	1.06	0.90	2		
417	HD 6907	1 06 52	-33 28.8	9.80	0.58	0.10	2		
418	-30 363	1 06 53	-30 18.9	12.35	1.00	0.80		2	
419	HD 6957	1 07 15	-27 08.8	9.67	0.45	-0.09	2		
420		1 07 25	-27 41.9	14.33	0.62	-0.13		2	
421	HD 6979	1 07 27	-29 02.2	9.25	0.57	0.02	2		
422	HD 6994	1 07 32	-32 21.1	9.80	0.69	0.22	2		
423	-33 426	1 07 37	-32 55.4	9.83	1.17	1.07	2		
424	-29 355	1 07 48	-29 30.9	10.95	0.74	0.22		1	
425	-30 367	1 07 55	-30 05.0	11.45	0.60	-0.04		2	
426	-34 452	1 07 58	-33 41.6	10.09	1.25	1.30	2		
427	-27 379	1 08 01	-27 27.0	10.73	1.03	0.79	2		
428	HD 7037	1 08 01	-27 37.0	9.64	0.54	0.06	2		
429	-29 357	1 08 06	-28 59.6	11.88	0.61	-0.04		2	
430	HD 7059	1 08 10	-28 02.7	8.88	0.41	0.00	2		
431	-30 369	1 08 14	-30 21.9	10.56	0.54	-0.03	2		
432	-28 360	1 08 18	-27 51.3	10.90	0.76	0.34	1		
433	-27 382	1 08 21	-27 10.6	11.50	0.50	-0.05	1		
434		1 08 23	-28 25.3	13.06	0.60	-0.09		2	
435	-33 431	1 08 24	-33 13.3	9.59	1.19	1.23	2		
436	-32 467	1 08 26	-31 36.1	10.37	0.53	0.09	2		
437	-33 430	1 08 27	-32 52.9	10.71	0.65	0.12	2		
438		1 08 28	-27 38.1	13.01	0.89	0.47		2	
439	-32 468	1 08 28	-32 10.5	10.51	0.52	-0.04	2		
440	-31 471	1 08 32	-31 01.7	12.44	1.24	1.22		1	
441		1 08 43	-31 22.9	13.38	0.55	-0.07		1	
442	HD 7136	1 08 48	-32 30.8	8.12	0.93	0.65	2		
443	-31 475	1 08 53	-31 10.9	10.36	0.61	0.07	2		
444	-27 384	1 09 02	-27 01.7	10.92	0.65	0.13	2		
445	-29 365	1 09 03	-29 22.5	10.79	0.50	0.04	1	1	
446	-30 373	1 09 04	-29 45.4	9.74	1.09	0.93	2		
447	HD 7150	1 09 05	-27 23.4	9.53	1.19	1.08	2		
448	-29 366	1 09 05	-28 57.7	10.72	0.46	-0.02	2		
449	HD 7165	1 09 12	-30 50.0	9.12	1.25	1.16	1	38	*
450	-33 436	1 09 14	-32 52.9	10.71	1.10	0.89	2		

NO	HD/CD	R.A.	DECL.	V	B-V	U-B	N1	N2	R
		(1950.0)							
451	HD 7185	1 09 23	-30 12.0	9.25	1.21	1.07	2		
452	-29 369	1 09 33	-28 54.3	11.03	0.95	0.51	1		
453	-29 370	1 09 33	-28 58.7	11.02	0.65	0.13	1	1	
454		1 09 37	-29 45.0	13.54	0.75	0.38		2	
455		1 09 38	-29 05.1	13.17	0.76	0.22		2	
456		1 09 43	-32 25.7	12.80	0.54	-0.05		2	
457		1 09 52	-33 20.6	15.04	0.59	0.03		2	
458	HD 7259	1 10 02	-31 04.0	6.53	0.47	0.04	2		
459	HD 7258	1 10 06	-29 18.9	9.45	1.21	1.10	2		
460	-29 372	1 10 08	-29 04.5	10.90	0.57	0.12	1	1	
461	-29 375	1 10 09	-29 30.0	12.25	0.43	0.02		2	
462	HD 7281	1 10 13	-32 38.6	9.58	0.48	-0.00	2		
463		1 10 16	-30 36.0	13.97	0.62	0.01		1	
464	HD 7280	1 10 18	-29 26.7	8.96	0.94	0.60	2		
465	-27 390	1 10 23	-27 31.0	12.02	0.78	0.29		2	
466	-30 377	1 10 34	-30 02.4	10.37	0.98	0.68	2		
467	HD 7310	1 10 36	-29 57.6	9.34	0.66	0.10	2		
468	-31 488	1 10 37	-31 08.2	10.38	0.55	-0.03	2		
469	-30 379	1 10 39	-30 13.5	12.01	0.57	-0.06		2	
470	HD 7322	1 10 39	-30 43.0	9.57	0.89	0.49	2		
471	-32 475	1 10 40	-32 30.0	10.92	0.64	0.11	1	1	
472	-32 477	1 10 48	-32 28.7	10.89	0.49	-0.02	1		
473		1 10 55	-33 25.9	13.35	0.86	0.48		2	
474	HD 7367	1 11 01	-33 00.3	9.72	0.45	0.01	2		
475	HD 7366	1 11 02	-32 10.4	8.23	1.30	1.40	2		
476	HD 7381	1 11 04	-33 05.1	9.10	1.10	1.00	3		
477	-32 480	1 11 07	-31 50.3	9.94	0.62	0.09	2		

Remarks:

PE 40 Secondary standard star.

PE 130 Secondary standard star.

PE 249 Double star, both comp. measured together.

PE 302 Secondary standard star.

PE 318 Secondary standard star.

PE 321, 322 Double star.

PE 325 Double star, both comp. measured together.

PE 411 Secondary standard star.

PE 449 secondary standard star.

2.4 Narrow-band photometry.

During two nights, when the weather conditions did not permit UBV photometry and the computer of the photon-counting system was out of order, 35 stars were measured with the same interference filters as used by Häggkvist and Oja (1970) for the Uppsala spectral criteria g_e and c_e. This gave a possibility to derive zero-points for the corresponding criteria measured by means of photographic narrow-band photometry. The results are given in Table 4.

2.4.1 Table 4.

Column 1	NO	Number as in Table 3. Four stars, not contained in Table 3, are designed by letters. See end of Table.
Column 2	M 4508	Monochromatic magnitude at λ4508.
Column 3,4	GE CE	The Uppsala spectral criteria, g_e and c_e, measured photoelectrically.
Column 5	W	Weight = number of measurements.
Column 6,7	G C	Value of g and c predicted from GE and CE. Unit: $0^m.01$.
Column 8,9	DG DC	Differences between photographic and transformed photoelectric values of g and c. Unit: $0^m.01$. The photographic values are corrected with the adopted zero-point correction.
Column 10	DM	The difference between the monochromatic magnitude at 4400 Å, computed from m_{4508}, and m_{4400}, measured in spectra.

Table 4.

NO	M4508	GE	CE	W	G	C	DG	DC	DM
258	10.60	1.52	0.35:	2	65	45	-2	-10	0.02
269	10.42	1.52	0.21	2	64	31	-4	-10	-0.14
205	10.40	1.56	0.39	1	68	50	-7	4	-0.02
A	11.43	0.83	0.05:	1	7	14	6	-3	0.04
B	11.76	0.99	0.03	1	20	12	1	2	0.02
378	8.78	1.30	0.13	2	46	23	-4	1	0.01
337	8.95	1.50	0.28	2	63	38	-6	-4	-0.02
145	9.76	1.62	0.23	2	73	33	-4	-3	-0.00
120	10.79	1.30	0.18	2	46	28	-3	0	-0.00
216	11.39	1.14	0.18	1	33	28	6	2	-0.04
191	10.17	1.13	0.01	1	32	10	-1	2	-0.02
310	11.06	1.14	0.00	1	33	8	1	1	0.09
286	11.69	1.14	0.09	1	33	18	4	2	-0.01
315	11.45	1.39	0.31	1	54	42	1	-7	-0.03
384	10.67	1.23	0.13	2	40	22	-2	5	-0.03
C	12.81	1.14		1	33		-1		0.01
277	9.98	1.13:		1	32		-1		0.05
192	10.65	1.45	0.24	2	59	34	4	-1	0.02
265	11.03	0.86	-0.00	1	9	8	4	-2	0.06
284	10.68:	1.49	0.12	1	62	21	-7	14	0.13:
279	10.28	1.25	0.17	2	42	27	-1	1	-0.10
244	9.76	1.06	0.04	2	26	13	1	-2	-0.02
241	8.63	1.53	0.37	1	66	47	5	-10	0.01
D	11.55	1.08	0.10	1	28	19	0	5	0.02
187	10.27	1.10	0.13	1	29	22	11	1	0.07
200	12.04	1.66	0.15	1	76	25	-7:	15:	0.04
306	8.65	1.59	0.30	2	70	40	-1	-6	0.01
379	10.94	1.05	-0.01	1	25	7	4	3	0.03
349	8.96	1.21	0.37	1	38	47	3	1	0.03
404	9.02:	1.17	0.35	2	35	46	6	-3	0.13:
355	10.33	1.33		1	48	0	3	0	-0.01
381	8.98	1.37		1	52	0	1	0	-0.02
393	11.49	1.53	0.27	1	65	37	-8	12	0.14
346	11.76	1.15	0.12	1	34	22	3	-2	0.05
449	10.02	1.39	0.24	1	54	34	-2	-5	-0.05

Star A: R.A. = $0^h\ 59^m\ 41^s$ Decl. = -28° 05:2

B: R.A. = $0^h\ 59^m\ 49^s$ Decl. = -28° 42:4

C: CD -30° 313 = 30.0.120 in the photographic catalogue.

D: R.A. = $0^h\ 52^m\ 52^s$ Decl. = -31° 41:0

3. THE PHOTOGRAPHIC DATA

3.1 The plates.

The whole SGP-region (39.7 square degrees) has been covered with photographic plates in B and V taken with the 50/65/172 cm Schmidt-Väisälä telescope of the Uppsala Southern Station at Mount Stromlo Observatory, Australia. The magnitudes and colours are here presented for 2835 stars in the declination zones -29° and -30° (11.8 square degrees) as derived from 36 plates in B and 36 plates in V. The plates used are for B: Kodak 103a-O + Schott GG 13,
and for V: Kodak 103a-D + Schott GG 14.

The exposure times are mostly 10^{m} and $3^{m} + 20^{s}$ (2 exposures). In B also some plates with exposure times of 30^{m}, originally taken for a galaxy counting project at the Observatory, were used.

3.2 The measurements.

All plates were measured with the Sartorius Iris Diaphragm Photometer at the Uppsala Observatory. The calibration curves were derived from the photoelectric sequence in S.A. 141 established by Bok and Bok (1961), extended by the photoelectric data in this paper.

Each plate covers an area of about $4^{\circ} \times 4^{\circ}$ in the sky. The uncertainty in centre correction made it necessary to limit the measurements to a region with a radius of about 1°.

The photometer was adjusted to give an iris reading of about 70 for the sky background on the short exposures and about 80 for the long exposures. By introducing the wedge into the light beam through the plate, the iris reading of the background could be made 2 - 3 times greater and thus rather insensitive to statistical fluctuations of plate graininess. In this way variations in background density were easily controlled. Plates, or parts of plates, with uneven background were rejected.

3.3 The corrections.

3.3.1 Centre correction.

The theoretical centre correction was computed from the geometry of the telescope. The plates have a vignetting-free field of 75'. However, the brighter stars on the plate seem to become slightly deformed at distances larger than about 1° from the centre, probably caused by chromatic aberration in the correcting plate and by re-

fraction in the plane filter in front of the curved plate. This will cause the iris readings to be too great, that is, the stars seem to become brighter at greater distances from the centre, contrary to the vignetting effect. Besides, the centre correction becomes magnitude dependent. The effect is greater for the V-plates than for the B-plates.

Empirically, the centre correction for the V-plates was found to be

$$\begin{aligned} &= 0 && , \quad d \leq 30' \\ &= \left[0.018(d' - 30')(V - V_{100})\right]^2 , && d > 30' \end{aligned} \qquad \text{(unit: } 0^m.01) \qquad (7)$$

where d' is the distance from the centre in minutes of arc,

V is the V magnitude of the star,

V_{100} is the magnitude corresponding to an iris reading of 100.

Since the centre correction for the brighter stars easily exceeded several tenths of a magnitude, it was necessary to measure the bright stars photoelectrically.

For the B-plates the vignetting correction was used:

$$\begin{aligned} &= 0 && , \quad d \leq 75' \\ &= -0.005(d' - 75')^2 , && d > 75' \end{aligned} \qquad \text{(unit: } 0^m.01) \qquad (8)$$

3.3.2 Atmospheric extinction.

The plates were mostly taken near zenith and the variations in atmospheric extinction over the plates are negligible.

3.3.3 Colour equations.

If the magnitudes derived from the plate and filter combination 103a-D + GG14 are denoted by v and those from 103a-O + GG13 by b, the relations to the UBV system were found to be:

$$\begin{aligned} V &= v + 0.106(b - v) - 0.065 \\ B-V &= 0.942(b - v) + 0.042 \end{aligned} \qquad (9)$$

3.3.4 Field corrections.

Variations in magnitude and colour over the investigated region were checked by dividing it into 24 areas, in which the differences between the data of Table 3 and the mean values of all plates were computed. Corrections, determined from these differences were applied to the mean values; in some areas they amounted to a few hundredths of a magnitude.

3.4 The coordinates.

Rectangular coordinates for all stars in the SGP-region down to about V = 17 were measured with the Repsold micrometer at the Uppsala Observatory. Reference stars were taken from the S.A.O. catalogue and corrected for proper motions to the actual date. The equatorial coordinates for the epoch 1950.0 were computed by Turner's method (Smart 1949). Preliminary standard coordinates were determined by first-order equations and final plate constants by second-order terms.

The mean errors of the computed right ascensions and declinations are $\varepsilon_\alpha = 0^s.15$

$\varepsilon_\delta = 2''$

3.5 The photographic catalogue.

3.5.1 The catalogue.

Column 1	NO	Star number in declination zones of 10 minutes of arc: XX.Y.zzz, where XX = degrees of southern declination, Y = the ten-digit of the minutes of arc in declination, zzz = current number in the zone.
Column 2	RA DECL	Equatorial coordinates for the epoch 1950.0, computed from the rectangular coordinates measured on the plates. (See 3.4).
Column 3	V B-V	Magnitude V and colour index B - V in the UBV system.
Column 4	NV NB	Weight of V and B respectively; the mean error corresponding to unit weight is $0^m.07$.
Column 5	HD/CD	Number in the Henry Draper Catalogue or the Cordoba Durchmusterung.
Column 6	PE	Number in Table 3 of this paper.
Column 7	R	Remarks: See end of catalogue.

3.5.2 The completeness of the catalogue.

The catalogue is complete to V = 15.8 over the whole SGP-region, $0^h\ 44^m < \alpha < 1^h\ 12^m$, $-33^\circ < \delta < -27^\circ$, and to V = 16.3 for the stars with right ascensions greater than $0^h\ 57^m\ 30^s$.

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
29.0.001	0 43 51	-29 00.6	14.18	0.58	3	2			
.002	0 44 02	-29 03.9	15.34	0.55	1	2			*
.003	0 44 03	-29 03.4	14.88	0.42	3	2			*
.004	0 44 06	-29 02.3	13.50	1.05	5	2			
.005	0 44 06	-29 03.5	13.01	0.44	5	3			
.006	0 44 10	-29 03.4	12.74	1.11	6	3			
.007	0 44 11	-29 00.5	15.51	0.61	1	1			
.008	0 44 20	-29 01.7	14.47	0.65	3	2			
.009	0 44 23	-29 02.0	15.40	0.72	1	2			
.010	0 44 30	-29 00.8	14.31	0.93	3	2			
29.0.011	0 44 30	-29 06.4	13.92	0.45	4	2			
.012	0 44 44	-29 00.6	14.60	1.32	3	2			
.013	0 44 47	-29 07.7	15.42	1.26	1	1			*
.014	0 44 51	-29 00.2	14.47	0.93	3	2			
.015	0 45 01	-29 04.0	14.46	0.69	3	2			
.016	0 45 06	-29 03.8	14.77	0.95	3	2			
.017	0 45 38	-29 00.3	15.27	0.76	1	2			
.018	0 45 40	-29 06.1	14.35	1.65	3	-		42	
.019	0 45 49	-29 05.6	14.35	1.04	3	2			
.020	0 45 56	-29 08.1	12.55	1.38	7	5			
29.0.021	0 45 58	-29 04.8	14.04	0.70	3	3			
.022	0 46 02	-29 00.0	14.11	0.79	6	4			
.023	0 46 03	-29 06.0	14.63	1.21	3	3			
.024	0 46 04	-29 04.1	15.48	0.62	1	3			
.025	0 46 27	-29 [illegible]	5.56	1.63	1	1			
.026	0 46 [illegible]	-29 [illegible]	14.87	0.95	2	3			
.027	0 46 35	-29 07.6	14.05	0.56	4	5			
.028	0 46 42	-29 07.9	15.56	1.19	1	1			
.029	0 46 56	-29 05.9	15.59	1.01	2	2			
.030	0 46 58	-29 06.9	14.47	1.18	4	4			
29.0.031	0 47 02	-29 02.4	15.04	0.69	3	4			
.032	0 47 04	-29 04.4	14.48	1.09	4	4			
.033	0 47 05	-29 01.9	11.60	0.48	11	8	-29 228	74	
.034	0 47 06	-29 08.1	12.63	1.18	9	8	-29 229		
.035	0 47 15	-29 05.4	14.15	0.99	5	5			
.036	0 47 24	-29 00.3	14.34	0.87	4	4			
.037	0 47 26	-29 07.2	15.18	0.34	2	2			
.038	0 47 27	-29 06.6	12.62	0.51	10	9	-29 231		
.039	0 47 35	-29 08.2	14.27	0.92	4	4			
.040	0 47 36	-29 00.8	13.20	0.38	8	8			
29.0.041	0 47 36	-29 01.3	13.86	0.69	6	6			
.042	0 47 50	-29 01.8	14.69	0.91	4	4			
.043	0 47 57	-29 00.5	11.23	1.35	10	9	-29 236		
.044	0 48 01	-29 02.6	12.50	0.40	9	8	-29 237		
.045	0 48 04	-29 02.8	14.67	0.93	4	4			
.046	0 48 12	-29 08.1	15.65	0.88	2	2			
.047	0 48 19	-29 02.1	12.21	0.43	10	8	-29 239		
.048	0 48 37	-29 05.9	11.66	0.63	13	11	-29 240	99	
.049	0 48 [illegible]	-29 03.4	12.62	1.03	9	9			
.050	0 48 [illegible]	-29 00.4	11.55	0.49	9	11	-29 241		
29.0.051	0 48 [illegible]	-29 03.6	15.65	0.82	2	3			
.052	0 49 [illegible]	-29 00.3	14.65	0.84	5	5			
.053	0 49 30	-29 07.1	12.73	0.49	9	11			
.054	0 49 33	-29 06.5	14.13	0.91	[illegible]	7			
.055	0 49 39	-29 08.0	14.27	0.71	4	6			
.056	0 49 41	-29 04.1	15.14	1.03	2	3			
.057	0 49 43	-29 02.1	10.72	0.56	11	11	-29 246	114	
.058	0 49 47	-29 05.2	14.06	0.65	4	7			
.059	0 49 48	-29 05.0	14.61	1.11					*
.060	0 49 48	-29 05.0	14.61	1.11					*
29.0.061	0 49 50	-29 01.8	15.02	0.76	[illegible]	5			
.062	0 49 51	-29 00.8	15.64	0.71	[illegible]	5			
.063	0 49 55	-29 04.4	12.98	0.83	9	10			
.064	0 50 02	-29 04.9	15.46	0.34	1	5			
.065	0 50 04	-29 02.3	12.83	0.72	9	11			
.066	0 50 05	-29 07.6	15.78	0.61	[illegible]	1			
.067	0 50 22	-29 05.0	14.60	0.67	3	4			
.068	0 50 38	-29 03.3	14.91	0.46	5	10			
.069	0 50 49	-29 00.3	12.04	0.93	11	[illegible]	-29 [illegible]		
.070	0 51 00	-29 06.1	14.4[illegible]	0.46	4	5			
29.0.071	0 51 18	-29 01.0	15.1[illegible]	0.10	1	5			
.072	0 51 21	-29 03.5	14.2[illegible]	0.65	4	4			
.073	0 51 30	-29 [illegible]	[illegible]	1.41			HD 5241	145	*
.074	0 51 [illegible]	-29 04.4	14.1[illegible]	1.10	8	2			*
.075	0 51 35	-29 06.6	13.90	1.03	6	7			
.076	0 51 41	-29 01.4	11.0[illegible]	0.21	11	11	-29 259	150	
.077	0 51 43	-29 07.5	14.[illegible]	1.02	6	[illegible]			
.078	0 51 44	-29 06.5	14.[illegible]	1.00	3	5			
.079	0 51 54	-29 08.5	13.[illegible]	0.67	8	[illegible]			
.080	0 51 53	-29 05.4	[illegible]	1.71	3	[illegible]			*
29.0.081	0 52 03	-29 03.0	14.27	[illegible]	8	10			
.082	0 52 06	-29 02.9	14.[illegible]	[illegible]	4	6			
.083	0 52 09	-29 00.3	14.2[illegible]	0.85	2	9			
.084	0 52 14	-29 01.7	14.94	0.[illegible]	3	5			
.085	0 52 27	-29 06.9	14.87	0.62	3	6			
.086	0 52 34	-29 01.1	15.[illegible]	0.73	2	4			
.087	0 52 49	-29 07.4	13.77	1.[illegible]	6	9			
.088	0 52 54	-29 05.7	15.[illegible]	[illegible]	2	4			
.089	0 52 57	-29 08.6	14.93	[illegible]	5	5			
.090	0 53 01	-29 00.5	10.83	0.2[illegible]	6	7			
29.0.091	0 53 06	-29 09.5	14.[illegible]	0.61	5	6			
.092	0 53 08	-29 05.1	14.78	[illegible]	5	5			
.093	0 53 11	-29 05.3	11.47	0.97	11	10	-29 265		
.094	0 53 13	-29 03.4	12.98	[illegible]	9	9			
.095	0 53 14	-29 00.9	14.[illegible]	[illegible]	5	5			
.096	0 53 21	-29 01.3	14.[illegible]	[illegible]	5	6			
.097	0 53 21	-29 03.1	11.[illegible]	[illegible]	9	9			
.098	0 53 34	-29 03.4	15.[illegible]	[illegible]	4	4			
.099	0 53 38	-29 03.5	15.1[illegible]	[illegible]	2	5			
.100	0 54 14	-29 05.4	15.[illegible]	0.76	3	4			

NO	R.A.	DECL.	V	[illegible]	NV	NB	HD/CD	PE	R
	(1950.0)								
29.0.101	0 54 28	-29 01.9	11.31	0.72	12	9	-29 273		
.102	0 54 29	-29 07.3	14.47	1.25	5	5			
.103	0 54 43	-29 09.5	13.52	0.72	8	11			
.104	0 54 56	-29 08.4	14.95	0.63	5	6		193	
.105	0 55 08	-29 07.3	13.25	0.61	10	11			
.106	0 55 19	-29 03.9	15.72	1.13	2	1			
.107	0 55 35	-29 09.0	15.12	0.77	3	5			
.108	0 55 39	-29 02.9	14.64	1.43	6	4			
.109	0 55 39	-29 03.9	15.77	0.81	2	2			
.110	0 55 45	-29 05.7	15.61	0.78	2	3			
29.0.111	0 55 47	-29 08.1	12.05	0.54	12	12	-29 280		
.112	0 56 18	-29 04.5	15.59	1.37	2	2			
.113	0 56 23	-29 02.1	14.00	0.82	7	7			
.114	0 56 41	-29 09.6	14.88	0.84	6	5			
.115	0 56 42	-29 00.2	15.39	0.69	2	4			
.116	0 56 42	-29 06.6	13.22	0.84	10	9		225	
.117	0 56 45	-29 07.6	14.38	0.38	5	7			
.118	0 56 45	-29 08.4	13.37	1.09	10	8			
.119	0 57 12	-29 02.4	13.35	0.90	12	9			
.120	0 57 13	-29 09.3	15.76	0.93	3	2			
29.0.121	0 57 17	-29 05.1	15.50	0.82	3	4			
.122	0 57 35	-29 07.7	14.94	0.75	4	3			
.123	0 57 36	-29 03.7	16.19	0.99	2	1			
.124	0 57 46	-29 01.4	15.69	0.94	2	2			*
.125	0 57 47	-29 01.2	15.80	1.35	2	1			
.126	0 57 47	-29 01.5	14.12	0.79	5	4			*
.127	0 57 47	-29 04.1	15.85	0.95	2	1			
.128	0 57 58	-29 01.2	15.03	1.14	3	2			
.129	0 58 02	-29 06.4	14.49	0.58	6	3			
.130	0 58 04	-29 02.6	12.88	0.62	10	7			
29.0.131	0 58 04	-29 06.6	14.37	0.70	5	4			
.132	0 58 26	-29 07.4	14.29	1.02	6	3			
.133	0 58 32	-29 08.9	11.56	0.87	12	7	-29 295		
.134	0 58 35	-29 03.3	12.06	0.64	12	8	-29 296		
.135	0 58 37	-29 05.7	14.87	0.67	6	3			
.136	0 58 50	-29 07.1	14.45	0.82	6	3			
.137	0 58 51	-29 01.3	13.62	0.69	7	6			
.138	0 58 51	-29 09.2	9.38	0.87	8	6	HD 6023	264	
.139	0 59 13	-29 01.5	15.86	1.48	2	1			
.140	0 59 15	-29 07.5	15.25	0.86	2	3			
29.0.141	0 59 21	-29 06.5	15.53	1.58	2	1			
.142	0 59 33	-29 05.3	16.18	1.05	2	1			
.143	0 59 39	-29 05.6	14.18	1.03	6	3			
.144	0 59 42	-29 06.9	13.74	1.49	8	3			
.145	0 59 50	-29 05.9	13.82	0.78	8	5			
.146	0 59 58	-29 01.8	14.58	1.33	6	3			
.147	1 00 03	-29 06.7	15.86	1.33	2	1			
.148	1 00 18	-29 08.8	13.65	0.55	11	8		291	
.149	1 00 20	-29 08.0	15.55	0.49	2	2			
.150	1 00 26	-29 00.0	14.90	1.12	5	3			
29.0.151	1 00 32	-29 04.5	15.46	0.63	2	2			
.152	1 00 39	-29 06.5	16.74	0.61	11	9			
.153	1 01 04	-29 05.7	16.15	1.17	2	1			*
.154	1 01 31	-29 09.3	15.09	0.81	2	5			
.155	1 01 40	-29 06.9	15.21	0.99	2	4			
.156	1 01 50	-29 01.4	14.36	0.66	6	5			
.157	1 01 53	-29 07.6	14.94	0.64	5	6			
.158	1 02 05	-29 06.2	16.19	1.25	2	2			
.159	1 02 07	-29 05.1	15.99	0.93	2	2			
.160	1 02 18	-29 02.9	14.82	0.87	5	6			
29.0.161	1 02 19	-29 00.7	13.55	0.81	8	10			
.162	1 02 35	-29 03.1	15.66	0.77	2	4			
.163	1 02 35	-29 07.3	15.37	0.77	2	5			
.164	1 02 46	-29 03.5	15.59	0.67	2	4			
.165	1 02 48	-29 09.8	14.81	0.82	5	6			
.166	1 03 04	-29 08.3	16.17	1.34	2	2			
.167	1 03 15	-29 09.9	15.23	1.09	2	3			
.168	1 03 19	-29 07.7	15.68	0.52	2	4			
.169	1 03 20	-29 06.6	13.73	1.61	6	7			
.170	1 03 22	-29 01.6	15.00	0.98	4	6			
29.0.171	1 03 26	-29 07.6	15.91	0.72	2	3			
.172	1 03 32	-29 01.1	13.88	0.97	6	9			
.173	1 03 32	-29 09.4	11.08	1.02	11	13	-29 325	346	
.174	1 03 36	-29 07.7	12.46	0.60	9	13			
.175	1 03 54	-29 09.5	15.41	0.92					*
.176	1 03 54	-29 09.5	16.01	1.11					*
.177	1 03 55	-29 04.6	13.24	0.59	9	11			
.178	1 04 13	-29 03.5	16.04	1.60	2	1			
.179	1 04 23	-29 09.6	15.51	0.65	2	4			
.180	1 04 29	-29 02.7	13.43	0.46	8	11			
29.0.181	1 04 29	-29 06.5	13.94	0.57	8	11			
.182	1 04 36	-29 08.8	14.08	0.74	5	8			
.183	1 05 04	-29 01.3	15.51	1.52	2	2			
.184	1 05 07	-29 09.4	12.09	0.49	11	13	-29 333		
.185	1 05 08	-29 08.6	14.84	0.90	5	5			
.186	1 05 09	-29 07.3	15.54	1.32	2	2			
.187	1 05 10	-29 03.5	16.18	1.07	2	2			
.188	1 05 12	-29 00.5	14.85	1.44	5	4			
.189	1 05 18	-29 05.6	14.04	0.74	5	7			
.190	1 05 25	-29 06.9	16.02	0.86	2	2			
29.0.191	1 05 53	-29 04.3	13.49	1.66	8	6			
.192	1 05 56	-29 03.1	16.04	1.32	2	2			
.193	1 06 02	-29 09.1	12.18	1.02	11	11	-29 339		
.194	1 06 [illegible]	-29 01.4	14.72	0.71	4	5			
.195	1 06 19	-29 05.5	14.98	0.69	4	5			
.196	1 06 23	-29 00.6	16.19	0.54	2	2			
.197	1 06 25	-29 08.6	12.71	0.34	8	9	-29 346		*
.198	1 06 26	-29 08.5	13.47	0.53	6	7			*
.199	1 06 29	-29 00.1	13.39	0.57	7	8			
.200	1 06 31	-29 02.1	11.39	0.56	11	9	-29 347		

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
29.0.201	1 06 33	-29 05.0	16.15	1.49	1	1			
.202	1 06 40	-29 01.3	14.76	0.92	4	4			
.203	1 06 43	-29 00.3	14.06	0.72	4	6			
.204	1 06 54	-29 09.9	15.32	0.92	2	4			
.205	1 07 03	-29 06.8	15.47	0.59	2	4			
.206	1 07 04	-29 00.1	13.56	0.96	6	7			
.207	1 07 05	-29 04.9	14.04	0.50	2	2			
.208	1 07 14	-29 01.6	14.73	0.66	4	5			
.209	1 07 [illegible]	-29 03.1	16.04	0.80	2	2			
.210	1 07 18	-29 07.8	16.12	0.65	2	2			
29.0.211	1 07 21	-29 00.1	15.65	0.51	1	3			
.212	1 07 27	-29 02.2	9.30	0.53	6	3	HD 6979	421	
.213	1 07 29	-29 08.0	15.40	0.81	2	2			
.214	1 07 42	-29 03.7	13.18	1.07	6	8	-29 354		
.215	1 07 42	-29 04.9	15.44	0.73	5	7			
.216	1 07 53	-29 05.7	15.63	0.55	1	3			
.217	1 07 58	-29 08.1	15.97	0.83	1	2			
.218	1 08 11	-29 01.1	15.45	1.44	1	2			
.219	1 08 17	-29 01.9	15.45	1.47	1	2			
.220	1 08 19	-29 04.4	15.03	0.37	1	3			
29.0.221	1 08 28	-29 02.0	15.12	1.07	1	2			
.222	1 08 30	-29 03.9	15.15	0.77	1	4			
.223	1 08 40	-29 [illegible]	12.64	0.57	4	3	-29 362		
.224	1 08 41	-29 [illegible]	14.37	0.59	5	4			
.225	1 08 59	-29 05.3	14.62	1.30	2	4			
.226	1 09 01	-29 07.1	14.00	1.48	1	1			
.227	1 09 01	-29 08.6	15.32	1.36	1	2			
.228	1 09 05	-29 00.9	13.47	0.85	3	6			
.229	1 09 14	-29 00.4	14.01	0.49	2	4			
.230	1 09 15	-29 00.8	14.57	0.46	2	2			
29.0.231	1 09 20	-29 08.5	14.92	0.84	2	4			
.232	1 09 38	-29 04.1	13.18	0.75	4	3		455	
.233	1 09 40	-29 07.6	14.98	1.03	2	1			
.234	1 09 55	-29 06.7	14.90	0.80	2	2			
.235	1 09 59	-29 09.4	16.01	0.96	1	1			
.236	1 10 04	-29 04.5	10.90	0.58	5	3	-29 372	460	
.237	1 10 06	-29 05.5	12.48	0.63	6	4	-29 373		
.238	1 10 17	-29 06.2	12.90	0.63	4	1			
.239	1 10 20	-29 09.9	14.08	0.94	3	1			
.240	1 10 23	-29 08.8	14.72	0.97	2	1			
29.0.241	1 10 29	-29 03.6	14.55	0.66	2	1			
.242	1 10 29	-29 09.2	12.94	0.98	4	1			
.243	1 10 33	-29 07.9	15.60	0.84	1	1			
.244	1 10 37	-29 06.4	12.12	0.66	6	1	-29 379		
.245	1 10 38	-29 02.1	13.64	0.73	3	1			
.246	1 10 38	-29 05.7	14.16	1.10	3	1			
.247	1 10 49	-29 01.1	14.81	0.87	2	1			
.248	1 10 52	-29 09.7	15.19	0.51	1	1			
.249	1 10 54	-29 01.7	15.15	0.93	1	1			
.250	1 10 59	-29 01.5	14.90	0.86	2	1			
29.1.001	0 43 54	-29 17.2	13.23	1.17	5	3			
.002	0 43 58	-29 19.7	15.12	1.35	1	1			
.003	0 44 05	-29 14.2	14.46	1.51	2	1			
.004	0 44 08	-29 11.2	13.14	0.69	5	3			
.005	0 44 12	-29 19.2	13.55	1.02	4	3		18	
.006	0 44 13	-29 15.5	15.58	0.62	1	1			
.007	0 44 18	-29 16.7	14.44	1.19	3	2			
.008	0 44 23	-29 16.7	14.08	1.19	4	2			
.009	0 44 44	-29 18.7	14.20	0.73	3	3			
.010	0 45 04	-29 10.2	15.55	1.32	1	0			
29.1.011	0 45 09	-29 16.6	15.27	1.51	1	1			
.012	0 45 13	-29 17.4	10.52	1.32	6	6	-29 222	33	
.013	0 45 41	-29 11.2	15.17	0.66					*
.014	0 45 41	-29 11.2	13.11	1.33					*
.015	0 45 41	-29 18.5	14.68	0.75	3	2			
.016	0 45 55	-29 18.3	15.21	0.66	3	3			
.017	0 45 57	-29 17.0	13.96	0.90	4	5			
.018	0 45 59	-29 15.2	13.49	0.53	6	6			
.019	0 46 02	-29 18.4	13.93	0.93	4	5			
.020	0 46 13	-29 15.2	15.52	1.50	1	1			
29.1.021	0 46 22	-29 14.9	14.73	0.70	6	4			
.022	0 46 26	-29 18.9	13.45	0.97	4	3			
.023	0 46 28	-29 12.1	15.71	1.40	1	1			
.024	0 46 38	-29 12.3	15.47	0.68	1	1			
.025	0 46 42	-29 12.2	14.35	0.59	4	5			
.026	0 46 49	-29 10.2	15.74	0.67	1	2			
.027	0 46 [illegible]	-29 16.5	14.69	0.65	6	7			
.028	0 47 22	-29 18.4	14.98	0.65	3	7			
.029	0 47 40	-29 15.5	15.41	0.81	2	4			
.030	0 47 42	-29 16.7	9.44	1.40	8	7	-29 232	86	
29.1.031	0 47 51	-29 14.6	15.36	1.23	2	2			
.032	0 47 52	-29 18.2	15.78	0.60	2	3			
.033	0 47 57	-29 19.9	14.85	0.91	4	4			
.034	0 48 02	-29 16.2	13.00	0.64	8	8			
.035	0 48 08	-29 19.2	14.80	0.67	4	4			
.036	0 48 09	-29 14.6	14.02	0.48	5	6			
.037	0 48 34	-29 19.2	13.65	1.08	6	7			
.038	0 48 36	-29 18.7	14.78	0.67	5	5			
.039	0 48 48	-29 15.5	15.09	0.58	2	5			
.040	0 48 59	-29 11.4	15.12	0.87	2	5			
29.1.041	0 49 01	-29 17.4	11.99	0.42	10	11	-29 247		
.042	0 49 11	-29 19.7	13.68	0.93	7	8			
.043	0 49 15	-29 11.6	15.19	0.92	2	5			
.044	0 49 34	-29 11.0	11.96	0.68	11	13	29 245		
.045	0 49 36	-29 13.7	14.35	0.91	4	6			
.046	0 49 38	-29 12.3	14.51	1.23	4	5			
.047	0 49 39	-29 14.0	15.11	0.75	2	5			
.048	0 49 39	-29 18.7	15.31	1.16	1	4			
.049	0 49 41	-29 18.2	14.66	0.68	4	6			
.050	0 49 47	-29 11.6	14.96	0.97	4	5			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
29.1.051	0 49 49	-29 18.5	15.78	0.77	1	3			
.052	0 49 54	-29 18.9	15.45	0.89	1	4			
.053	0 49 59	-29 14.0	13.37	0.66	7	5			*
.054	0 49 59	-29 14.1	14.54	0.72	3	5			*
.055	0 50 00	-29 16.7	14.53	0.92	4	6			
.056	0 50 07	-29 18.7	13.49	0.56	6	10			
.057	0 50 20	-29 18.4	12.05	1.05	11	12	-29 249		
.058	0 50 32	-29 19.7	15.11	1.07	2	4			
.059	0 50 35	-29 14.4	15.56	0.77	1	4			
.060	0 50 40	-29 13.0	14.93	0.71	3	5		134	
29.1.061	0 50 42	-29 17.2	15.20	0.75	1	5			
.062	0 50 54	-29 13.1	15.22	1.35	2	3			
.063	0 50 56	-29 18.5	14.99	0.79	2	5			
.064	0 51 13	-29 12.9	15.50	0.50	1	5			
.065	0 51 13	-29 13.8	9.70	0.54	10	9	HD 5204	138	
.066	0 51 17	-29 19.0	14.03	0.51	5	9			
.067	0 51 27	-29 13.9	14.35	1.55	5	6			
.068	0 51 28	-29 16.7	15.60	0.86	2	3			
.069	0 51 31	-29 12.4	13.48	0.75	8	11			
.070	0 51 46	-29 11.1	12.93	1.13	9	11			
29.1.071	0 51 55	-29 14.0	14.67	0.81	5	6			
.072	0 51 58	-29 13.3	11.65	0.51	13	12	-29 262		
.073	0 52 16	-29 13.9	14.65	1.01	4	5			
.074	0 52 18	-29 12.9	12.92	0.70	9	10			
.075	0 52 52	-29 13.3	12.96	0.75	9	12			
.076	0 53 07	-29 11.0	15.39	0.80	2	4			
.077	0 53 08	-29 11.7	14.41	0.91	5	5			
.078	0 53 39	-29 11.4	11.33	0.55	12	9	-29 269		
.079	0 54 10	-29 10.1	12.84	0.96	10	9			
.080	0 54 15	-29 19.7	11.65	0.61	16	10	-29 272		
29.1.081	0 54 18	-29 11.8	13.11	1.26	10	8			
.082	0 54 22	-29 15.3	14.92	0.72	6	6			
.083	0 54 38	-29 16.4	14.84	0.95	6	7			
.084	0 54 43	-29 12.9	15.03	1.11	5	5			
.085	0 54 50	-29 13.0	15.70	1.11	2	2			
.086	0 55 07	-29 14.3	13.11	0.76	11	12			
.087	0 55 27	-29 17.4	15.64	0.42	2	4			
.088	0 55 38	-29 12.1	12.37	0.56	12	12	-29 277		
.089	0 55 39	-29 15.7	14.25	0.76	6	6			
.090	0 55 40	-29 13.7	10.81	0.81	12	11	-29 278	210	
29.1.091	0 55 44	-29 19.5	14.99	0.81	5	5			
.092	0 55 50	-29 15.7	15.44	0.57	2	4			
.093	0 55 51	-29 19.7	13.53	0.64	9	10			
.094	0 55 52	-29 17.2	13.57	0.79	8	10			
.095	0 55 57	-29 18.0	15.32	1.23	2	3			
.096	0 56 01	-29 11.1	10.58	1.16	12	11	-29 281	216	
.097	0 56 11	-29 14.8	14.89	0.66	6	5			
.098	0 56 12	-29 13.1	14.77	0.86	6	5			
.099	0 56 14	-29 14.9	15.39	0.68	2	4			
.100	0 56 28	-29 18.7	13.31	0.93	11	10			
29.1.101	0 56 32	-29 19.7	15.00	1.19	6	4			
.102	0 56 37	-29 18.0	12.94	1.18	11	10			
.103	0 57 12	-29 11.0	13.58	0.67	8	10			
.104	0 57 12	-29 16.4	13.46	0.74	11	9			
.105	0 57 53	-29 14.8	14.81	0.60	6	3			
.106	0 57 55	-29 17.2	10.90	0.71	11	7	-29 288	251	
.107	0 58 00	-29 15.1	16.07	0.54	2	1			
.108	0 58 01	-29 13.4	15.99	0.54	2	2			
.109	0 58 02	-29 18.7	16.28	0.84	2	1			
.110	0 58 04	-29 13.8	11.72	0.48	15	7	-29 290		
29.1.111	0 58 04	-29 18.2	13.94	0.86	8	4			
.112	0 58 07	-29 11.5	15.07	0.86	3	3			
.113	0 58 07	-29 13.5	16.10	1.47	2	1			
.114	0 58 15	-29 13.2	13.81	0.72	8	6			
.115	0 58 17	-29 10.8	15.25	0.91	2	2			
.116	0 58 23	-29 18.4	15.01	1.35	5	2			
.117	0 58 33	-29 18.7	14.77	0.92	6	3			
.118	0 58 38	-29 12.2	14.91	0.85	6	3			
.119	0 58 53	-29 13.3	13.88	0.68	8	5			
.120	0 59 09	-29 18.9	14.50	1.02	6	3			
29.1.121	0 59 11	-29 17.5	15.98	0.99	2	1			
.122	0 59 18	-29 12.3	14.38	0.88	6	3			
.123	0 59 23	-29 13.6	13.38	0.70	12	6			
.124	0 59 25	-29 16.9	16.26	0.56	2	1			
.125	0 59 30	-29 13.7	15.14	0.83	2	3			
.126	0 59 35	-29 10.6	14.72	0.56	6	3			
.127	0 59 35	-29 11.7	16.10	1.42	2	1			
.128	0 59 48	-29 15.5	13.47	1.34	12	5			
.129	0 59 54	-29 17.9	11.48	0.87	14	9	-29 304		
.130	0 59 59	-29 15.5	13.94	0.99	8	5			
29.1.131	1 00 01	-29 18.0	14.83	0.69	6	4			
.132	1 00 29	-29 12.1	14.51	0.61	6	3			
.133	1 00 36	-29 16.7	15.90	0.60	2	2			
.134	1 00 44	-29 11.2	10.92	0.63	13	11	-29 308	298	
.135	1 00 45	-29 17.7	14.85	0.51	6	4			
.136	1 00 50	-29 10.7	12.82	0.92	11	8			
.137	1 00 51	-29 11.0	15.88	0.77	2	1			
.138	1 00 54	-29 12.4	15.03	0.81	3	4			
.139	1 00 54	-29 12.7	15.75	0.98	2	1			
.140	1 00 57	-29 16.2	14.48	0.78	6	4			
29.1.141	1 01 05	-29 17.7	12.06	0.58	15	12	-29 310		
.142	1 01 07	-29 11.1	15.45	0.71	2	3			
.143	1 01 13	-29 16.5	14.91	0.56	6	5			
.144	1 01 16	-29 16.2	16.03	1.11	2	2			
.145	1 01 33	-29 17.4	15.16	0.92	3	4			
.146	1 01 39	-29 19.7	10.45	1.35	14	12	-29 313	315	
.147	1 01 52	-29 17.9	14.57	1.05	7	6			
.148	1 01 56	-29 16.9	14.18	0.79	7	8			
.149	1 01 58	-29 11.3	16.17	0.87	2	2			
.150	1 02 00	-29 12.3	12.31	0.64	14	15	-29 317		

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
29.1.151	1 02 07	-29 12.0	14.36	0.79	4	5			
.152	1 02 09	-29 16.9	13.01	0.71	10	11			
.153	1 02 25	-29 10.7	13.11	0.81	10	11			
.154	1 02 25	-29 18.9	11.09	0.97	14	13	-29 318	329	
.155	1 02 42	-29 11.9	14.79	1.21	6	6			
.156	1 02 46	-29 14.4	14.55	0.87	6	6			
.157	1 02 47	-29 16.0	15.60	0.72	2	4			
.158	1 02 47	-29 19.9	14.16	0.71	6	7			
.159	1 02 57	-29 11.6	14.79	0.84	5	6			
.160	1 03 05	-29 15.2	13.95	0.99	8	8			
29.1.161	1 03 15	-29 12.4	14.71	0.78	5	7			
.162	1 03 18	-29 14.5	15.95	0.68	2	3			
.163	1 03 18	-29 19.9	14.25	1.01	5	7			
.164	1 03 25	-29 14.8	13.84	0.94	5	9			
.165	1 03 37	-29 10.0	15.26	0.96	2	4			
.166	1 03 42	-29 13.8	15.12	0.84	2	6			
.167	1 03 53	-29 17.2	15.10	1.08	2	4			
.168	1 03 56	-29 18.4	13.99	0.99	6	8			
.169	1 04 03	-29 17.9	10.82	0.44	11	12	-29 327	353	
.170	1 04 07	-29 14.4	15.04	0.85	5	6			
29.1.171	1 04 12	-29 12.1	14.18	0.70	5	9			
.172	1 04 19	-29 17.2	15.64	0.53	2	5			
.173	1 04 26	-29 13.1	14.73	0.64	5	6			
.174	1 04 34	-29 13.8	16.29	0.58	2	2			
.175	1 04 36	-29 11.5	15.37	1.09	2	3			*
.176	1 04 37	-29 11.7	12.46	0.95	10	13	-29 3[illegible]		*
.177	1 04 43	-29 11.8	15.68	0.74	2	6			
.178	1 04 48	-29 10.3	15.49	0.88	2	4			
.179	1 04 53	-29 14.1	15.09	1.16	2	4			
.180	1 05 02	-29 11.7	13.64	0.68	6	9			
29.1.181	1 05 06	-29 18.0	13.86	0.86	6	7			
.182	1 05 17	-29 16.4	16.13	0.85	2	2			
.183	1 05 24	-29 10.2	14.01	0.96	5	7			
.184	1 05 28	-29 13.9	15.14	0.79	3	5			
.185	1 05 29	-29 13.2	13.98	0.62	5	8			
.186	1 05 33	-29 16.7	14.02	1.17	5	6			
.187	1 05 39	-29 19.9	14.83	1.03	5	5			
.188	1 05 49	-29 13.3	13.27	0.65	8	10			
.189	1 05 50	-29 18.9	16.05	0.62	2	2			*
.190	1 05 52	-29 11.8	11.02	0.56	11	11	-29 337	394	
29.1.191	1 05 57	-29 14.8	13.74	0.73	5	8			
.192	1 06 01	-29 10.4	16.04	0.44	2	3			
.193	1 06 04	-29 15.8	15.04	0.49	3	5			
.194	1 06 13	-29 14.8	15.54	0.70	2	4			
.195	1 06 17	-29 13.0	12.61	0.89	9	11	-29 343		
.196	1 06 46	-29 19.4	14.35	1.02	5	5			
.197	1 06 47	-29 16.7	14.76	0.96	4	5			
.198	1 06 58	-29 14.4	15.18	0.71	2	4			
.199	1 07 04	-29 12.6	14.65	0.62	5	5			
.200	1 07 21	-29 12.7	15.89	0.95	2	2			
29.1.201	1 07 22	-29 17.2	16.06	1.45	1	1			
.202	1 07 25	-29 10.0	15.70	1.48	2	2			
.203	1 07 27	-29 16.9	14.99	0.91	4	5			
.204	1 07 47	-29 10.0	12.78	1.17	5	7			
.205	1 07 54	-29 15.8	13.83	0.71	4	6			
.206	1 07 59	-29 12.9	15.81	1.47	1	2			
.207	1 08 12	-29 11.0	16.00	0.50	1	2			
.208	1 08 15	-29 18.2	15.79	1.06	1	1			
.209	1 08 22	-29 12.0	13.37	0.87	4	5			*
.210	1 08 22	-29 16.2	13.56	0.56	5	6			
29.1.211	1 08 22	-29 17.9	13.58	0.71	5	6			
.212	1 08 29	-29 18.5	16.17	0.62	1	2			
.213	1 08 32	-29 11.4	16.08	1.33	1	2			
.214	1 08 39	-29 11.7	14.54	0.74	3	4			
.215	1 08 40	-29 14.6	13.20	0.62	6	7			
.216	1 08 40	-29 18.4	15.68	0.98	1	2			
.217	1 08 45	-29 19.4	15.56	0.97	1	2			
.218	1 08 53	-29 14.4	14.28	1.00	2	4			
.219	1 09 04	-29 18.7	15.[illegible]	0.44	1	3			
.220	1 09 06	-29 17.4	14.75	1.[illegible]	2	4			
29.1.221	1 09 12	-29 10.2	14.67	1.48	2	3			
.222	1 09 17	-29 12.4	13.48	0.64	5	6			
.223	1 09 24	-29 15.8	11.80	0.94	4	4	-29 367		
.224	1 09 25	-29 18.4	12.58	0.91	4	6	-29 368		
.225	1 09 38	-29 15.7	13.66	0.98	3	4			
.226	1 10 05	-29 16.5	15.65	0.75	1	1			
.227	1 10 06	-29 12.4	15.51	1.49	1	1			
.228	1 10 06	-29 18.9	9.48	1.20	4	1	HD 7258	459	
.229	1 10 08	-29 11.1	16.26	0.45	1	1			
.230	1 10 13	-29 15.4	16.26	0.67	1	1			
29.1.231	1 10 15	-29 15.7	14.49	0.84	2	1			
.232	1 10 22	-29 15.3	11.41	0.58	5	1	-29 377		
.233	1 10 33	-29 19.7	11.42	0.63	5	1	-29 378		
.234	1 10 37	-29 18.2	15.61	1.31	1	1			
.235	1 10 54	-29 11.4	15.31	0.96	1	1			
.236	1 10 56	-29 10.9	16.09	0.65	1	1			
29.2.001	0 43 48	-29 28.6	15.72	0.47	1	1			
.002	0 43 50	-29 23.5	13.63	0.[illegible]	4	5			
.003	0 43 53	-29 26.2	14.58	0.[illegible]	3	2			
.004	0 43 54	-29 22.9	14.55	0.[illegible]	3	2			
.005	0 43 58	-29 26.4	11.90	1.02	7	5	-29 217		
.006	0 44 09	-29 29.0	14.79	0.97	3	2			
.007	0 44 21	-29 27.4	13.44	0.83	4	4			
.008	0 44 32	-29 25.7	15.68	1.17	1	0			
.009	0 44 32	-29 29.7	15.08	1.09	1	2			
.010	0 44 41	-29 24.7	9.09	0.56	6	2	HD 4530	27	

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
29.2.011	0 44 43	-29 26.0	14.65	1.05	3	2			
.012	0 44 49	-29 23.7	15.09	0.65	1	2			
.013	0 44 51	-29 21.7	13.75	0.61	4	4			
.014	0 45 11	-29 24.7	13.83	0.74	4	3			
.015	0 45 12	-29 29.7	15.41	0.65	1	2			
.016	0 45 16	-29 21.0	15.24	0.64	1	2			
.017	0 45 17	-29 25.4	15.39	1.32	1	1			
.018	0 45 29	-29 21.9	13.99	0.57	4	3		39	
.019	0 45 34	-29 28.0	14.33	0.61	3	4			
.020	0 45 41	-29 23.2	14.36	0.67	3	4			
29.2.021	0 45 50	-29 22.7	15.04	0.77	2	3			
.022	0 45 55	-29 27.0	14.94	1.20	2	3			
.023	0 45 58	-29 28.4	15.11	1.34	2	3			
.024	0 46 03	-29 21.0	15.64	0.41	1	3			
.025	0 46 03	-29 24.4	12.56	0.46	6	8	-29 224		
.026	0 46 07	-29 21.7	13.57	0.76	4	6			
.027	0 46 26	-29 24.4	14.31	0.81	4	4		60	
.028	0 46 39	-29 26.9	14.15	1.02	4	4			
.029	0 46 41	-29 23.0	14.99	0.74	2	4		68	
.030	0 46 54	-29 28.5	15.53	1.10	1	1			
29.2.031	0 46 56	-29 24.9	13.49	0.88	7	7			
.032	0 47 05	-29 24.9	15.43	0.69	2	3			
.033	0 47 07	-29 28.5	15.77	0.74	2	2			
.034	0 47 18	-29 22.7	15.37	0.71	2	3			
.035	0 47 24	-29 22.7	15.12	0.79	2	4			
.036	0 47 24	-29 27.7	15.12	1.51	2	2			
.037	0 47 28	-29 26.0	15.79	0.73	2	2			
.038	0 47 33	-29 24.4	15.30	1.37	2	2			
.039	0 47 43	-29 24.2	13.34	0.71	8	7			
.040	0 47 55	-29 20.4	15.61	0.92	2	2			
29.2.041	0 47 56	-29 29.4	12.56	0.51	8	8			
.042	0 48 12	-29 26.2	13.37	0.92	8	7			
.043	0 48 21	-29 24.9	14.97	0.82	3	5			
.044	0 48 43	-29 20.7	15.64	0.48	2	4			
.045	0 48 47	-29 20.2	15.35	0.94	2	4			
.046	0 48 49	-29 20.2	13.72	0.70	6	9			
.047	0 48 52	-29 26.2	15.50	0.57	1	4			
.048	0 48 56	-29 28.1	14.93	1.07	3	5			
.049	0 49 06	-29 26.5	13.57	0.64	5	10			
.050	0 49 29	-29 26.7	13.42	0.99	8	9			
29.2.051	0 49 50	-29 22.9	15.09	0.86	1	5			
.052	0 50 02	-29 21.7	14.26	0.62	4	7			
.053	0 50 03	-29 20.0	13.80	1.03	6	7			
.054	0 50 04	-29 22.4	15.15	0.64	1	5			
.055	0 50 04	-29 24.9	10.01	1.11	10	11	-29 247	120	
.056	0 50 05	-29 28.8	15.39	0.93	1	4			
.057	0 50 34	-29 29.1	11.83	0.94	12	13	-29 250		
.058	0 50 48	-29 29.0	13.31	0.74	8	10			
.059	0 50 51	-29 21.9	15.29	1.28	1	3			
.060	0 50 57	-29 25.8	11.83	0.54	12	11	-29 252		
29.2.061	0 50 58	-29 24.9	14.80	0.70	4	5			
.062	0 51 11	-29 24.7	15.52	0.60	2	5			
.063	0 51 18	-29 26.1	15.34	0.72	2	5			
.064	0 51 19	-29 22.0	15.30	1.12	2	4			
.065	0 51 24	-29 29.4	12.77	0.75	8	11			
.066	0 51 29	-29 22.0	11.44	0.45	12	12	-29 257		
.067	0 51 34	-29 25.6	15.24	0.70	2	6		147	
.068	0 51 37	-29 20.4	15.21	0.60	2	6			
.069	0 51 39	-29 28.2	12.78	0.72	9	12			
.070	0 51 45	-29 26.6	15.66	0.82	2	3			
29.2.071	0 51 49	-29 28.5	13.96	0.84	6	7			*
.072	0 51 49	-29 28.8	13.71	0.59	6	10			*
.073	0 51 55	-29 26.8	11.82	0.49	13	12	-29 261		
.074	0 52 44	-29 21.4	14.54	1.44	5	6			
.075	0 52 44	-29 25.9	13.61	1.57	7	7			
.076	0 52 48	-29 23.9	14.89	1.05	5	6			
.077	0 53 05	-29 27.0	15.64	1.47	2	1			
.078	0 53 32	-29 23.4	14.42	0.96	6	6			
.079	0 53 42	-29 24.2	15.41	0.68	2	4			
.080	0 53 55	-29 25.0	14.29	0.79	6	6			
29.2.081	0 53 57	-29 22.9	13.57	1.20	10	8			
.082	0 54 07	-29 27.4	14.33	0.78	7	7			
.083	0 54 23	-29 29.4	13.69	0.77	9	10			
.084	0 54 24	-29 28.5	15.75	0.74	2	4			
.085	0 54 40	-29 21.4	14.93	0.87	6	7			
.086	0 54 44	-29 29.4	15.60	0.74	2	4			
.087	0 54 49	-29 24.4	15.17	1.08	3	5			
.088	0 54 50	-29 27.9	15.19	0.69	2	7			
.089	0 55 00	-29 29.0	15.75	0.83	2	3			
.090	0 55 11	-29 21.4	13.49	0.90	11	12			
29.2.091	0 55 12	-29 27.3	15.49	0.60	2	5			
.092	0 55 16	-29 28.5	10.99	0.49	14	13	-29 274	201	
.093	0 55 41	-29 24.9	12.35	0.44	13	13	-29 279		
.094	0 55 52	-29 22.9	15.30	1.44	2	1			
.095	0 56 02	-29 21.4	15.49	0.74	2	4			
.096	0 56 05	-29 29.8	15.7:	0.3:					*
.097	0 56 05	-29 29.8	14.9:	0.9:					*
.098	0 56 06	-29 22.5	14.88	0.88	6	5			
.099	0 56 21	-29 29.0	15.71	0.55	2	4			
.100	0 56 43	-29 24.4	15.10	1.18	4	3			
29.2.101	0 56 47	-29 25.0	14.63	0.52	7	5			
.102	0 56 52	-29 26.2	14.74	0.77	7	5			
.103	0 57 01	-29 22.9	15.66	1.10	2	2			*
.104	0 57 02	-29 22.7	12.77	0.74	11	6			*
.105	0 57 03	-29 23.7	11.81	1.02	15	13	-29 284		
.106	0 57 04	-29 22.9	14.76	0.81	6	5			
.107	0 57 07	-29 20.5	12.94	0.76	12	10			
.108	0 57 27	-29 23.0	15.32	0.68	3	5			
.109	0 58 11	-29 25.4	12.65	1.36	11	6			
.110	0 58 22	-29 21.7	15.88	0.89	2	1			

NO	R.A. (1950.0)	DECL.	V	B-V	NV	NB	HD/CD	PE	R
29.2.111	0 58 46	-29 21.9	10.37	0.73	14	7	-29 297	262	
.112	0 58 50	-29 24.2	16.05	0.44	2	2			
.113	0 59 06	-29 21.7	15.47	0.65	2	2			
.114	0 59 08	-29 24.1	15.77	0.92	2	1			
.115	0 59 25	-29 27.6	12.56	0.72	12	9		275	
.116	0 59 26	-29 24.7	14.63	0.49	6	4			
.117	0 59 32	-29 26.8	11.44	0.50	15	9	-29 302	276	
.118	0 59 35	-29 24.5	14.21	1.10	7	4			
.119	0 59 41	-29 24.9	13.94	0.98	8	5			
.120	0 59 42	-29 21.1	14.14	1.01	6	4			
29.2.121	1 00 01	-29 21.4	10.98	0.97	14	9	-29 305	286	
.122	1 00 05	-29 24.0	15.43	1.17	2	2			
.123	1 00 07	-29 25.0	14.96	0.94	6	4			
.124	1 00 11	-29 26.7	12.31	0.84	14	10	-29 306		
.125	1 00 16	-29 22.9	14.02	0.71	7	6			
.126	1 00 18	-29 21.9	11.41	0.58	14	10	-29 307		
.127	1 00 21	-29 28.2	14.03	1.50	8	4		293	
.128	1 00 23	-29 24.7	16.02	0.60	2	2			
.129	1 00 29	-29 28.2	14.82	0.94	6	4			
.130	1 00 32	-29 26.6	15.27	1.05	2	3			
29.2.131	1 00 39	-29 26.2	15.39	0.37	2	3			
.132	1 00 52	-29 27.6	13.31	0.21	11	8			
.133	1 00 53	-29 23.2	12.61	0.68	12	9	-29 309		
.134	1 00 56	-29 27.7	14.01	0.82	8	5			
.135	1 00 56	-29 28.1	16.07	0.71	2	1			
.136	1 01 00	-29 25.5	14.91	0.69	6	4			
.137	1 01 11	-29 27.0	12.71	0.76	14	8			
.138	1 01 18	-29 22.9	15.23	0.92	2	3			
.139	1 01 27	-29 22.4	14.62	1.27	7	4			
.140	1 01 28	-29 25.2	14.74	1.04	7	4			
29.2.141	1 01 30	-29 26.0	15.88	1.19	2	2			
.142	1 01 44	-29 26.4	15.69	0.85	2	2			
.143	1 01 52	-29 26.8	14.56	0.74	7	6			
.144	1 01 55	-29 22.2	12.87	0.89	13	11			
.145	1 01 55	-29 25.2	12.35	0.71	14	11			
.146	1 01 57	-29 24.9	16.28	0.72	2	2			
.147	1 02 18	-29 27.1	15.16	0.73	2	6			
.148	1 02 22	-29 20.5	13.61	0.93	8	9			
.149	1 02 28	-29 20.4	14.62	1.23	6	5			
.150	1 02 31	-29 25.6	12.49	0.62	14	14	-29 319		
29.2.151	1 02 33	-29 23.5	13.92	0.86	8	9			
.152	1 02 38	-29 21.2	15.42	0.67	2	5			
.153	1 02 54	-29 27.9	15.14	0.70	2	7			
.154	1 02 57	-29 27.5	10.94	0.85	14	14	-29 321	334	
.155	1 03 03	-29 25.0	13.72	0.75	9	11			
.156	1 03 12	-29 25.2	15.46	1.60	2	3			
.157	1 03 14	-29 28.0	14.97	0.78	5	7			
.158	1 03 16	-29 25.5	14.09	0.56	2	4			
.159	1 03 23	-29 26.8	13.08	1.13	4	9			
.160	1 03 28	-29 24.9	14.66	0.75	5	7			
29.2.161	1 03 30	-29 20.9	14.89	0.57	5	7			
.162	1 03 36	-29 20.7	15.38	0.94	2	5			
.163	1 03 45	-29 25.6	16.21	0.50	2	3			
.164	1 03 56	-29 20.4	14.65	0.65	5	7			
.165	1 04 05	-29 23.4	12.87	0.56	9	15	-29 328		
.166	1 04 09	-29 22.7	12.97	0.82	9	13			
.167	1 04 09	-29 24.5	15.16	0.70	2	7			
.168	1 04 34	-29 21.0	14.22	1.34	5	7			
.169	1 04 36	-29 26.7	13.96	0.91	5	10			
.170	1 04 36	-29 27.9	11.75	0.70	12	14	-29 330		
29.2.171	1 04 55	-29 29.3	14.73	1.24	5	6			
.172	1 05 08	-29 28.4	15.64	1.01	2	4			
.173	1 05 15	-29 28.2	14.30	1.00	5	6			
.174	1 05 26	-29 24.9	16.18	0.68	2	2			
.175	1 05 28	-29 25.2	14.54	0.98	5	7			
.176	1 05 31	-29 20.9	14.49	0.64	5	7			
.177	1 05 34	-29 21.7	14.75	1.73	6	10			
.178	1 05 56	-29 29.9	14.98	0.73	4	6			
.179	1 05 58	-29 25.6	12.36	0.96	11	11	-29 338	337	
.180	1 06 00	-29 28.4	14.33	0.66	2	4			
29.2.181	1 06 04	-29 27.9	12.09	0.45	11	12	-29 341		
.182	1 06 08	-29 24.7	12.34	0.66	11	11	-29 342		
.183	1 06 20	-29 20.4	14.93	0.77	4	5			
.184	1 06 40	-29 28.1	14.94	0.82	5	6			
.185	1 06 43	-29 27.5	16.14	0.88	2	2			
.186	1 06 52	-29 27.6	13.99	0.87	5	8			
.187	1 06 57	-29 25.5	14.55	0.49	4	7			
.188	1 07 01	-29 29.4	15.54	0.63	2	4			
.189	1 07 26	-29 23.4	14.19	0.61	8	10			
.190	1 07 31	-29 24.2	14.45	0.75	2	4			
29.2.191	1 07 34	-29 20.4	16.72	0.67	2	4			
.192	1 07 39	-29 27.0	15.78	0.99	2	4			
.193	1 07 40	-29 28.3	16.13	0.86	2	2			
.194	1 08 01	-29 20.0	15.17	0.70	1	4			
.195	1 08 05	-29 21.0	14.68	0.88	3	5			
.196	1 08 25	-29 23.9	15.54	0.56	1	3			
.197	1 08 39	-29 24.2	15.27	1.23	1	2			
.198	1 08 54	-29 20.5	15.6:	0.8:					*
.199	1 08 54	-29 23.7	14.24	0.68	2	4			*
.200	1 08 55	-29 20.2	11.95	0.46	5	7	-29 363		*
29.2.201	1 08 55	-29 20.4	14.2:	0.6:					*
.202	1 08 58	-29 21.9	15.08	0.77	1	3			
.203	1 09 03	-29 22.5	13.82	0.49	5	6	-29 365	445	
.204	1 09 07	-29 24.2	15.55	0.62	1	2			
.205	1 09 08	-29 27.2	15.07	1.14	1	2			
.206	1 09 13	-29 22.3	15.60	1.17	1	1			
.207	1 09 18	-29 28.4	15.36	1.23	1	1			
.208	1 09 20	-29 27.6	16.06	0.62	1	1			
.209	1 09 26	-29 21.9	14.54	0.63	2	3			
.210	1 09 31	-29 28.6	14.96	0.55	2	3			

NO	R.A. (1950.0)	DECL.	V	B-V	NV	NB	HD/CD	PE	R
29.2.211	1 09 35	-29 28.5	14.83	1.05	2	3			
.212	1 09 44	-29 26.9	14.96	0.42	1	3			
.213	1 09 48	-29 20.7	15.72	1.22	1	1			
.214	1 09 48	-29 27.2	14.23	0.88	2	3			
.215	1 09 55	-29 28.4	12.65	0.60	4	4	-29 371		
.216	1 10 00	-29 28.9	14.47	1.07	2	3			
.217	1 10 09	-29 22.7	14.01	0.89	3	1			
.218	1 10 11	-29 25.5	14.04	1.00	2	1			
.219	1 10 13	-29 22.5	15.59	0.60	1	1			
.220	1 10 18	-29 26.7	8.96	0.94			HD 7280	464	*
29.2.221	1 10 22	-29 26.6	15.53	0.91	1	1			
.222	1 10 28	-29 24.4	14.75	1.56	2	1			
.223	1 10 55	-29 21.4	14.74	0.87	2	1			
29.3.001	0 43 53	-29 39.4	13.96	0.75	3	4			
.002	0 44 09	-29 36.2	9.84	0.60	5	4	-30 227	15	
.003	0 44 27	-29 34.5	15.75	1.27	1	1			
.004	0 44 30	-29 34.1	14.26	0.69	3	3			
.005	0 44 34	-29 32.8	13.50	0.93	4	4			
.006	0 44 58	-29 31.8	14.43	0.94	3	2			
.007	0 45 03	-29 39.4	13.91	0.44	3	5			
.008	0 45 18	-29 31.3	13.07	0.51	5	5			
.009	0 45 23	-29 32.3	13.75	0.80	4	3			
.010	0 45 30	-29 37.0	7.58	0.32			HD 4623	40	*
29.3.011	0 45 34	-29 33.9	13.44	0.65	5	4			
.012	0 45 34	-29 37.9	11.93	0.72	7	6			
.013	0 45 50	-29 36.1	13.69	1.61	4	4			
.014	0 45 51	-29 31.5	13.83	0.63	4	6			*
.015	0 46 36	-29 30.2	13.29	0.64	7	7			
.016	0 46 54	-29 35.5	14.99	0.89	2	4			
.017	0 47 06	-29 32.8	14.50	0.74	4	4			
.018	0 47 06	-29 33.5	14.98	0.75	3	4			
.019	0 47 08	-29 30.2	10.57	0.85	9	7	-29 230	75	
.020	0 47 23	-29 32.0	15.58	1.00	2	2		80	
29.3.021	0 47 27	-29 35.7	14.66	0.62	4	4			
.022	0 47 28	-29 34.7	15.23	0.48	2	4			*
.023	0 47 28	-29 34.8	14.25	0.87	4	4			*
.024	0 47 41	-29 34.3	14.70	0.59	4	4			
.025	0 47 43	-29 36.3	11.49	0.61	10	8	-30 251		
.026	0 47 43	-29 39.8	15.07	0.66	2	5			
.027	0 47 44	-29 35.9	13.34	0.61	8	7			
.028	0 47 49	-29 38.4	12.57	0.65	8	8			
.029	0 47 51	-29 33.2	11.48	0.44	10	8	-29 234	91	
.030	0 47 59	-29 35.7	13.72	0.52	6	6			
29.3.031	0 48 09	-29 37.1	15.69	1.28	2	2			
.032	0 48 12	-29 32.1	15.03	0.69	2	4			
.033	0 48 15	-29 32.0	13.53	0.71	5	7			
.034	0 48 16	-29 33.7	14.32	1.03	4	4			*
.035	0 48 29	-29 34.3	13.06	0.99	7	10			
.036	0 48 30	-29 37.2	13.69	1.00	5	7			
.037	0 48 40	-29 39.5	12.88	0.52	7	12			
.038	0 48 45	-29 31.6	13.16	0.42	7	10			
.039	0 49 00	-29 33.5	15.22	0.90	1	5			
.040	0 49 06	-29 35.3	15.69	1.41	1	2			
29.3.041	0 49 09	-29 32.3	13.87	0.94	5	7			
.042	0 49 12	-29 37.0	14.75	0.72	3	5			
.043	0 49 13	-29 39.6	15.33	1.29	1	2			*
.044	0 49 22	-29 37.9	14.16	0.55	4	8			
.045	0 49 39	-29 33.1	13.69	1.44	6	7			
.046	0 49 40	-29 34.6	15.13	1.31	2	4			
.047	0 50 03	-29 31.2	13.52	1.00	6	8			
.048	0 50 07	-29 38.8	11.59	0.71	10	11	-30 262		
.049	0 50 19	-29 32.8	15.40	1.03	1	3			
.050	0 50 52	-29 38.7	11.78	0.61	13	12	-30 266	136	
29.3.051	0 50 55	-29 36.8	13.09	1.37	9	10			
.052	0 51 00	-29 35.4	11.67	0.93	12	12	-29 253		
.053	0 51 11	-29 33.3	14.11	1.00	5	6			*
.054	0 51 11	-29 33.5	14.42	0.70	5	6			*
.055	0 51 19	-29 35.4	14.75	0.66	5	6			
.056	0 51 22	-29 39.8	13.46	0.58	7	11		139	
.057	0 51 25	-29 37.8	13.12	0.98	9	11			
.058	0 51 29	-29 35.7	12.54	0.65	10	13			
.059	0 51 31	-29 33.1	14.91	1.05	4	6			
.060	0 51 31	-29 35.5	14.30	1.01	4	6			
29.3.061	0 51 35	-29 32.8	15.65	0.71	2	4			
.062	0 51 43	-29 39.7	13.24	0.77	9	11			
.063	0 51 47	-29 38.4	14.68	0.72	5	6			
.064	0 51 54	-29 36.6	15.68	1.21	2	1			
.065	0 52 01	-29 32.0	15.15	0.66	2	6			
.066	0 52 01	-29 38.9	12.76	0.94	9	11			
.067	0 52 07	-29 33.0	15.52	0.51	2	5			
.068	0 52 11	-29 34.5	15.77	0.59	2	4			
.069	0 52 14	-29 30.7	14.97	1.49	5	4			
.070	0 52 14	-29 37.2	15.08	1.15	3	4			
29.3.071	0 52 50	-29 34.3	13.28	0.98	9	12			
.072	0 52 53	-29 37.6	15.02	1.61	5	2			
.073	0 52 59	-29 32.9	15.57	0.76	2	4			
.074	0 53 01	-29 30.8	14.25	0.90	6	6			
.075	0 53 15	-29 34.0	15.67	0.76	2	4			
.076	0 53 32	-29 35.4	10.82	0.94	15	12	-29 267	173	
.077	0 53 38	-29 30.7	13.62	0.67	8	10			
.078	0 53 38	-29 35.2	11.14	0.64	15	12	-29 268	174	
.079	0 53 46	-29 36.8	15.42	0.61	2	4			
.080	0 53 54	-29 30.2	15.18	0.62	2	6			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/GC	PE	R
	(1950.0)								
29.3.081	0 54 01	-29 30.9	12.51	1.44	18	1			
.082	0 54 02	-29 35.8	14.16	0.75	7	9			
.083	0 54 06	-29 36.7	12.72	0.72	14	[illegible]		[illegible]	
.084	0 54 09	-29 34.3	15.48	0.71	2	5			
.085	0 54 12	-29 31.0	14.87	1.00	3	5			
.086	0 54 16	-29 31.7	15.44	0.[illegible]	2	[illegible]			
.087	0 54 44	-29 3[illegible]	9.51	0.[illegible]	14	11	HD 5567	.9[illegible]	
.088	0 55 10	-29 33.[illegible]	12.82	1.[illegible]	2	10			
.089	0 55 22	-29 34.2	14.26	0.[illegible]	4	[illegible]			
.090	0 55 25	-29 37.6	15.49	0.68	2	5			
29.3.091	0 55 28	-29 39.1	14.29	0.[illegible]	11	11			
.092	0 55 32	-29 36.4	15.49	0.91	2	5			
.093	0 55 51	-29 40.1	14.47	0.[illegible]	4	7			
.094	0 55 54	-29 37.6	15.[illegible]	0.[illegible]	[illegible]	[illegible]			*
.095	0 55 56	-29 30.8	14.84	1.[illegible]	6	[illegible]			
.096	0 56 12	-29 37.6	4.30	0.1[illegible]			HD 5737		*
.097	0 56 18	-29 35.9	14.35	0.[illegible]	[illegible]	2			*
.098	0 56 32	-29 34.2	11.65	0.[illegible]	14	11	-29 282	222	*
.099	0 57 03	-29 33.2	12.51	[illegible]	15	11			
.100	0 57 05	-29 34.[illegible]	13.88	1.4[illegible]	3	5			
29.3.101	0 57 28	-29 35.3	14.16	0.[illegible]	7	[illegible]			
.102	0 57 29	-29 34.[illegible]	15.39	1.37	3	2			
.103	0 57 31	-29 35.[illegible]	15.19	0.86	2	3			
.104	0 57 35	-29 [illegible]	15.59	0.[illegible]	2	2			
.105	0 57 42	-29 34.8	15.62	0.69	2	2			
.106	0 57 43	-29 30.[illegible]	14.64	0.58	[illegible]	4			
.107	0 57 44	-29 35.[illegible]	16.10	1.28	2	1			
.108	0 57 48	-29 31.[illegible]	15.22	1.[illegible]	[illegible]	2			
.109	0 58 00	-29 34.[illegible]	16.00	0.[illegible]	[illegible]	[illegible]			
.110	0 58 02	-29 38.1	14.97	0.67	5	3			
29.3.111	0 58 03	-29 37.9	15.26	1.52	3	1			
.112	0 58 04	-29 35.[illegible]	16.10	0.[illegible]	2	[illegible]			
.113	0 58 21	-29 35.8	15.20	1.[illegible]	3	2			
.114	0 58 21	-29 37.7	13.40	0.79	11	6			
.115	0 58 27	-29 30.7	14.30	1.20	6	3			
.116	0 58 35	-29 31.6	13.09	[illegible]	11	6			
.117	0 58 40	-29 32.8	16.08	.97	[illegible]	1			
.118	0 58 40	-29 [illegible]	14.20	0.[illegible]	[illegible]	4			
.119	0 58 42	-29 39.2	11.99	0.61	15	10	-30 3[illegible]		
.120	0 58 59	-29 [illegible]	15.3[illegible]	1.0[illegible]					*
29.3.121	0 58 59	-29 36.1	[illegible]	1.4[illegible]					*
.122	0 59 08	-29 32.[illegible]	16.02	0.[illegible]	2	1			
.123	0 59 32	-29 [illegible]	15.58	0.62	2	3			
.124	0 59 34	-29 37.5	14.40	1.[illegible]	6	[illegible]			
.125	0 59 4[illegible]	-29 [illegible]	14.95	0.[illegible]	6	[illegible]			
.126	0 59 58	-29 33.7	15.14	1.[illegible]	3	4			
.127	1 00 04	-29 [illegible]	13.41	1.1[illegible]	11	7			
.128	1 00 14	-29 [illegible]	15.66	0.52	2	[illegible]			
.129	1 00 24	-29 31.[illegible]	14.61	0.[illegible]	6	[illegible]			
.130	1 00 27	-29 31.[illegible]	15.19	0.[illegible]	2	[illegible]			
29.3.131	1 00 27	-29 32.3	14.93	0.[illegible]	[illegible]	[illegible]			
.132	1 00 44	-29 33.7	13.10	0.[illegible]	14	7			
.133	1 00 51	-29 [illegible]	13.10	0.[illegible]	13	7			
.134	1 00 58	-29 [illegible]	15.90	1.[illegible]	[illegible]	[illegible]			
.135	1 00 59	-29 32.6	14.45	0.[illegible]	[illegible]	5			
.136	1 01 05	-29 36.2	14.73	0.71	[illegible]	[illegible]			
.137	1 01 11	-29 [illegible]	15.67	0.85	[illegible]	2			
.138	1 01 11	-29 [illegible]	15.10	0.[illegible]	[illegible]	[illegible]			
.139	1 01 18	-29 [illegible]	[illegible]	1.[illegible]	[illegible]	[illegible]			
.140	1 01 20	-29 31.[illegible]	15.38	0.[illegible]	[illegible]	[illegible]			
29.3.141	1 01 26	-29 28.5	15.28	[illegible]	[illegible]	[illegible]			
.142	1 01 34	-29 [illegible]	16.29	0.[illegible]	2	2			
.143	1 01 46	-29 33.3	15.15	[illegible]	[illegible]	[illegible]			
.144	1 01 49	-29 37.4	15.33	0.[illegible]	[illegible]	[illegible]			
.145	1 01 54	-29 [illegible]	15.74	1.[illegible]	[illegible]	[illegible]			
.146	1 01 56	-29 [illegible]	15.12	[illegible]	[illegible]	[illegible]			
.147	1 02 11	-29 32.7	14.63	1.[illegible]	[illegible]	[illegible]			
.148	1 02 18	-29 [illegible]	13.89	[illegible]	[illegible]	7			
.149	1 02 20	-29 [illegible]	15.31	1.[illegible]	[illegible]	[illegible]			
.150	1 02 37	-29 35.[illegible]	11.47	0.[illegible]	12	[illegible]	[illegible]	3[illegible]	
29.3.151	1 02 41	-29 [illegible]	16.06	0.[illegible]	[illegible]	[illegible]			
.152	1 02 43	-29 35.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
.153	1 02 45	-29 [illegible]	15.38	[illegible]	[illegible]	4			
.154	1 02 49	-29 [illegible]	11.70	0.[illegible]	14	[illegible]	-30 3[illegible]		
.155	1 02 51	-29 31.[illegible]	15.62	1.41	[illegible]	[illegible]			
.156	1 03 [illegible]	-29 33.[illegible]	11.37	[illegible]	[illegible]	[illegible]	-30 3[illegible]		
.157	1 03 01	-29 [illegible]	12.77	0.[illegible]	[illegible]	[illegible]	-30 [illegible]		
.158	1 03 06	-29 [illegible]	15.04	1.[illegible]	[illegible]	[illegible]			
.159	1 03 10	-29 35.7	16.24	0.39	2	2			
.160	1 03 10	-29 [illegible]	15.18	0.[illegible]	2	[illegible]			
29.3.161	1 03 36	-29 [illegible]	15.94	0.86	2	[illegible]			
.162	1 03 59	-29 35.[illegible]	15.83	0.[illegible]	2	2			
.163	1 04 05	-29 37.4	10.39	0.52	11	10	-30 3[illegible]	35[illegible]	
.164	1 04 07	-29 37.6	14.10	0.[illegible]	[illegible]	[illegible]			
.165	1 04 09	-29 37.0	14.70	1.[illegible]	[illegible]	[illegible]			
.166	1 04 12	-29 31.9	14.93	0.97	[illegible]	[illegible]			
.167	1 04 34	-29 32.4	15.85	0.73	2	4			
.168	1 04 35	-29 36.[illegible]	13.60	1.[illegible]	[illegible]	[illegible]			
.169	1 04 41	-29 34.7	16.21	0.52	2	[illegible]			
.170	1 04 49	-29 33.4	15.59	0.[illegible]	[illegible]	4			
29.3.171	1 04 53	-29 39.1	15.45	0.84	2	4			
.172	1 05 11	-29 33.2	9.29	[illegible]	12	9	HD 6724	3[illegible]	
.173	1 05 14	-29 31.6	15.06	0.93	2	6			
.174	1 05 22	-29 [illegible]	15.93	0.[illegible]	[illegible]	4			
.175	1 05 31	-29 34.[illegible]	16.18	1.34	2	2			
.176	1 05 44	-29 36.[illegible]	14.91	0.72	4	[illegible]			
.177	1 06 02	-29 39.[illegible]	14.27	0.[illegible]	4	7			
.178	1 06 06	-29 31.[illegible]	15.69	0.[illegible]	2	4			
.179	1 06 13	-29 33.7	15.35	0.[illegible]	2	5			
.180	1 06 20	-29 34.5	13.79	0.[illegible]	[illegible]	[illegible]			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/GC	PE	R
	(1950.0)								
29.3.181	1 06 22	-29 36.6	15.65	1.45	2	2			
.182	1 06 29	-29 36.8	14.80	0.70	4	6			
.183	1 06 39	-29 30.5	13.49	0.70	7	9			
.184	1 06 46	-29 31.2	14.20	1.29	4	6			*
.185	1 07 00	-29 36.3	13.82	0.84	6	8			
.186	1 07 12	-29 36.0	13.03	0.60	8	10			
.187	1 07 19	-29 39.1	15.64	0.91	2	3			
.188	1 07 30	-29 35.0	15.57	0.84	2	4			
.189	1 07 48	-29 30.9	10.95	0.69	10	9	-29 355	424	
.190	1 07 48	-29 32.7	14.96	0.95	4	6			
29.3.191	1 07 49	-29 30.3	15.01	0.72	3	6			
.192	1 08 05	-29 33.6	14.54	0.75	3	6			
.193	1 08 06	-29 31.2	16.10	0.75	1	2			
.194	1 08 10	-29 30.9	13.28	0.45	5	9			
.195	1 08 14	-29 31.2	13.27	0.62	4	6			
.196	1 08 30	-29 39.9	14.94	0.60	2	3			
.197	1 08 33	-29 35.3	14.24	0.68	2	3			
.198	1 08 49	-29 35.5	12.84	0.53	4	4			
.199	1 08 51	-29 34.6	15.74	0.41	1	2			
.200	1 08 52	-29 31.9	14.92	1.36	2	2			
29.3.201	1 08 56	-29 34.5	15.94	0.65	1	2			
.202	1 09 03	-29 35.1	13.73	0.63	3	4			
.203	1 09 10	-29 31.6	14.12	0.49	2	3			
.204	1 09 19	-29 37.3	13.00	0.69	4	4			
.205	1 09 22	-29 31.7	16.28	0.51	1	1			
.206	1 09 22	-29 38.9	14.51	0.66	2	3			
.207	1 09 34	-29 37.5	15.04	0.97	2	2			
.208	1 09 34	-29 39.9	14.80	1.12	2	3			
.209	1 09 40	-29 35.6	14.38	0.73	2	3			
.210	1 09 41	-29 30.2	15.47	0.55	1	2			*
29.3.211	1 09 55	-29 36.3	15.06	0.67	1	3			
.212	1 10 09	-29 30.0	12.24	0.41	5	1	-29 375	461	
.213	1 10 13	-29 35.8	14.9[illegible]	0.4[illegible]					*
.214	1 10 13	-29 35.8	15.1[illegible]	0.5[illegible]					*
.215	1 10 15	-29 34.5	16.18	0.49	1	1			
.216	1 10 19	-29 34.6	15.86	1.24	1	1			
.217	1 10 24	-29 38.6	15.44	0.78	1	1			
.218	1 10 52	-29 31.1	15.48	0.88	1	1			
.219	1 10 54	-29 34.1	13.18	0.73	4	1			
.220	1 10 55	-29 36.8	11.20	0.63	5	1	-30 381		
29.3.221	1 10 56	-29 38.0	16.20	0.45	1	1			
.222	1 10 58	-29 39.5	14.62	0.76	2	1			
.223	1 11 59	-29 30.5	16.23	0.44	1	1			
.224	1 10 59	-29 31.1	12.79	0.65	4	1			
29.4.001	0 43 44	-29 42.3	13.02	0.70	4	5			
.002	0 43 46	-29 40.0	15.53	0.68	1	2			
.003	0 43 46	-29 40.8	15.33	0.58	1	3			
.004	0 43 50	-29 43.1	12.10	0.63	6	7	-30 223	8	
.005	0 43 51	-29 43.6	15.21	1.22	1	2			
.006	0 43 57	-29 40.7	14.83	0.90	2	3			
.007	0 44 01	-29 45.5	14.93	0.53	2	3			
.008	0 44 05	-29 49.8	14.83	0.76	2	3			
.009	0 44 10	-29 40.3	15.02	1.20	2	2			
.010	0 44 13	-29 41.0	14.27	0.73	2	4			
29.4.011	0 44 20	-29 45.4	14.81	0.87	2	3			
.012	0 44 23	-29 40.8	12.62	1.19	5	5			
.013	0 44 33	-29 47.5	14.44	1.65	2	2			
.014	0 44 38	-29 42.6	14.81	1.40	2	2		24	
.015	0 44 39	-29 43.8	15.52	1.33	1	1		26	
.016	0 44 55	-29 46.3	9.78	0.63	6	6	HD 4566	31	
.017	0 45 03	-29 48.0	14.92	1.14	2	2			
.018	0 45 08	-29 47.1	12.86	0.62	4	6			
.019	0 45 11	-29 47.3	14.94	0.78	2	3			
.020	0 45 11	-29 48.5	12.27	0.95	5	6			
29.4.021	0 45 17	-29 42.5	14.32	0.44	2	4			
.022	0 45 30	-29 40.9	12.90	0.72	4	5			
.023	0 45 47	-29 40.1	12.94	0.56	5	9			
.024	0 45 53	-29 42.9	14.63	0.63	2	5			
.025	0 46 05	-29 43.8	10.44	1.06	8	7	-30 244	53	
.026	0 46 06	-29 46.0	15.37	0.82	1	3			
.027	0 46 07	-29 48.6	14.18	0.87	2	6			
.028	0 46 08	-29 41.8	15.49	0.95	1	3			
.029	0 46 23	-29 42.1	15.23	0.67	1	4			
.030	0 46 33	-29 46.3	15.67	1.58	1	2			
29.4.031	0 46 35	-29 48.5	10.72	0.24	8	7	-30 248	66	
.032	0 46 40	-29 45.7	13.24	0.69	6	7			
.033	0 46 56	-29 49.0	14.34	1.11	3	5			
.034	0 47 00	-29 43.1	15.05	0.86	1	5			
.035	0 47 07	-29 41.4	14.61	0.52	3	5			
.036	0 47 11	-29 44.4	15.20	1.37	1	3			
.037	0 47 19	-29 45.0	15.06	0.50	1	5			
.038	0 47 20	-29 48.8	13.72	1.04	5	6			
.039	0 47 25	-29 45.0	12.95	0.81	6	8		81	
.040	0 47 30	-29 40.9	15.39	1.01	1	3			
29.4.041	0 47 33	-29 43.3	13.85	0.68	4	7			
.042	0 47 45	-29 47.9	14.93	0.93	1	5			
.043	0 47 52	-29 49.0	15.37	0.88	1	3			
.044	0 47 59	-29 40.2	13.01	0.77	4	8			
.045	0 48 09	-29 42.9	11.76	0.74	9	9			
.046	0 48 32	-29 48.7	15.26	1.33	1	2			
.047	0 48 36	-29 43.7	11.51	0.48	13	14	-30 256	1101	
.048	0 48 52	-29 46.2	15.34	0.81	[illegible]	4			
.049	0 48 59	-29 47.1	13.96	0.82	5	8			
.050	0 49 08	-29 45.8	13.52	1.11	7	10			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
29.4.051	0 49 37	-29 47.1	12.44	0.51	11	15			
.052	0 49 40	-29 46.0	14.50	0.93	4	6			
.053	0 49 54	-29 41.1	13.71	0.82	7	13			
.054	0 49 54	-29 42.7	15.19	0.69	1	6			
.055	0 49 54	-29 43.6	12.20	0.48	11	16		116	
.056	0 49 55	-29 43.1	15.15	0.86	2	5			
.057	0 49 57	-29 47.5	12.02	0.81	12	15			
.058	0 49 59	-29 45.5	12.55	0.65	10	14			
.059	0 50 01	-29 46.9	14.86	0.63	4	7			
.060	0 50 03	-29 46.5	13.45	1.46	9	1			
29.4.061	0 50 09	-29 45.7	13.99	0.81		8			
.062	0 50 44	-29 42.1	13.66	0.98	7	9			
.063	0 50 48	-29 43.6	15.49	0.87	1	4			
.064	0 50 53	-29 41.6	11.63	0.65	14	15	-30 267		
.065	0 51 01	-29 44.2	13.76	0.70	7	13			
.066	0 51 03	-29 48.0	14.09	0.66	5	10			
.067	0 51 05	-29 40.9	14.98	1.43	4	4			
.068	0 51 10	-29 43.7	12.67	1.42	11	14			
.069	0 51 12	-29 46.8	15.10	0.66	2	8			
.070	0 51 20	-29 48.6	14.88	0.66	4	8			
29.4.071	0 51 23	-29 47.3	13.65	0.89	7	14			
.072	0 51 34	-29 45.5	13.71	0.83	7	14			
.073	0 51 37	-29 43.2	15.02	1.44	4	5			
.074	0 51 46	-29 46.0	15.66	1.24	2	3			
.075	0 51 55	-29 45.8	14.01	0.74	5	12			
.076	0 52 00	-29 43.0	10.82	0.84	13	14	-30 271	155	
.077	0 52 10	-29 45.7	15.00	1.25	4	5			
.078	0 52 12	-29 43.0	15.35	0.64	2	6			
.079	0 52 31	-29 42.9	13.91	1.39	7	8			
.080	0 53 16	-29 40.5	13.55	1.17	10	8			
29.4.081	0 53 30	-29 46.1	15.54	0.75	1	5			
.082	0 53 33	-29 49.2	15.13	0.91	2	6			
.083	0 53 39	-29 41.0	10.82	0.64	15	12	-30 278	175	
.084	0 53 39	-29 45.9	10.18	0.47	11	13	-30 279	176	
.085	0 53 44	-29 42.4	13.19	1.69	8	14			
.086	0 54 01	-29 48.3	15.32	0.59	2	8			
.087	0 54 07	-29 46.3	14.94	0.94	4	8			
.088	0 54 14	-29 48.3	14.28	0.82	5	9			
.089	0 54 20	-29 41.2	14.37	0.70	7	7			
.090	0 54 22	-29 41.7	11.54	0.85	17	13	-30 281	185	
29.4.091	0 54 37	-29 48.0	10.42	1.14	11	15	-30 285	188	
.092	0 54 40	-29 46.3	15.44	0.70	2	5			
.093	0 54 40	-29 40.6	15.03	1.33	4	5			*
.094	0 54 47	-29 46.0	15.18	0.58	2	7			
.095	0 54 56	-29 46.1	13.89	0.58	6	12			
.096	0 55 04	-29 49.8	15.05	0.52	3	8			
.097	0 55 06	-29 44.2	15.68	0.95	2	3			
.098	0 55 07	-29 40.9	14.28	0.61	6	9		196	
.099	0 55 21	-29 42.3	15.56	0.46	2	5			
.100	0 55 23	-29 41.1	11.70	0.49	16	13	-30 289		
29.4.101	0 55 29	-29 47.8	9.92	1.07	9	9	-30 291	206	
.102	0 56 03	-29 40.4	15.69	1.40	2	4			*
.103	0 56 03	-29 49.7	15.26	0.99	1	4			
.104	0 56 18	-29 40.6	15.37	0.52	2	2			*
.105	0 56 22	-29 47.7	14.40	0.61	4	7			
.106	0 56 24	-29 43.9	14.78	0.75	4	4			
.107	0 56 33	-29 49.4	15.32	0.54	2	6			
.108	0 56 37	-29 40.2	9.31	0.18	12	4	HD 5769	223	
.109	0 56 48	-29 42.8	15.33	0.81	2	4			
.110	0 56 59	-29 46.0	12.67	0.53	9	9			
29.4.111	0 57 02	-29 47.4	15.79	0.67	1	2			
.112	0 57 36	-29 48.2	15.96	0.53	2	3			
.113	0 57 55	-29 43.4	16.00	0.81	2	2			
.114	0 58 12	-29 48.7	13.58	0.91	8	5			
.115	0 58 20	-29 47.8	15.71	1.05	1	1			
.116	0 58 21	-29 48.2	16.71	1.25	1	1			
.117	0 58 25	-29 41.9	16.16	1.43	1	1			
.118	0 58 27	-29 41.9	14.43	0.86	4	3			
.119	0 58 32	-29 47.2	15.75	1.14	2	1			
.120	0 58 32	-29 48.4	14.00	1.14	7	4			
29.4.121	0 58 38	-29 41.4	16.13	1.63	1	1			
.122	0 58 39	-29 43.0	13.62	0.98	4	7			
.123	0 58 42	-29 41.0	14.17	0.58	4	5			
.124	0 58 42	-29 48.7	15.37	1.18	1	2			
.125	0 58 46	-29 49.5	14.73	1.17	3	4			
.126	0 58 49	-29 45.7	13.39	1.03	1	7			
.127	0 58 59	-29 40.8	15.45	0.51	1	1			
.128	0 59 07	-29 45.3	15.19	0.61	1	1			
.129	0 59 08	-29 46.4	14.04	0.93	4	4			
.130	0 59 14	-29 43.0	14.36	0.77	4	3			
29.4.131	0 59 17	-29 41.4	14.45	0.65	3	5			
.132	0 59 24	-29 49.3	12.28	0.95	12	10	-30 312		
.133	0 59 29	-29 49.3	15.75	0.74	2	4			
.134	0 59 33	-29 43.4	15.40	0.80	2	3			
.135	0 59 36	-29 48.1	15.36	0.99	2	3			
.136	0 59 37	-29 47.4	12.91	0.27	9	10	-30 314		
.137	0 59 37	-29 49.3	16.10	0.99	2	2			
.138	0 59 38	-29 41.0	16.06	1.09	1	1			
.139	0 59 40	-29 40.0	11.40	0.42	14	11	-30 316		
.140	0 59 43	-29 45.0	15.70	0.77	2				
29.4.141	0 59 45	-29 43.7	15.09	0.57	2	3			
.142	0 59 59	-29 40.7	15.72	0.58	2	3			
.143	1 00 02	-29 43.0	15.79	0.89	1	3			
.144	1 00 06	-29 48.3	15.83	1.08	2	3			
.145	1 00 15	-29 46.5	14.96	1.14	6	4			
.146	1 00 36	-29 48.7	11.46	0.47	12	10	-30 320	296	
.147	1 00 43	-29 49.7	15.55	1.36	2	2			
.148	1 00 54	-29 47.6	6.29	1.46			HD 6269	302	*
.149	1 00 56	-29 46.7	15.40	0.66	2	4			
.150	1 01 07	-29 48.7	14.38	0.71	6	5			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
29.4.151	1 01 08	-29 48.2	14.22	0.97	6	5			
.152	1 01 39	-29 41.9	15.24	0.47	2	2			
.153	1 01 42	-29 40.0	9.87	0.55	16	8	HD 6339	317	
.154	1 02 00	-29 44.3	15.27	0.88	2	2			
.155	1 02 01	-29 47.4	13.66	0.80	9	10			
.156	1 02 07	-29 43.5	15.94	1.18	2	2			
.157	1 02 09	-29 44.4	15.15	0.76	3	4			
.158	1 02 23	-29 43.3	14.92	0.86	6	6			
.159	1 02 23	-29 48.0	15.36	0.95	3	4			
.160	1 02 24	-29 45.1	14.76	1.45	7	4			
29.4.161	1 02 27	-29 40.9	14.98	0.64	4	6			
.162	1 02 29	-29 42.8	15.84	0.97	2	2			
.163	1 02 32	-29 47.6	14.45	0.94	7	6			
.164	1 02 33	-29 40.6	15.04	0.32	3	7			
.165	1 02 34	-29 40.8	15.14	0.65	2	6			
.166	1 02 43	-29 40.5	15.03	0.75	2	2			
.167	1 02 45	-29 46.6	15.87	0.78	3	3			
.168	1 02 50	-29 47.8	15.25	1.37	3	3			
.169	1 02 55	-29 44.8	13.83	1.16	10	8			
.170	1 02 55	-29 48.1	12.46	0.75	15	12			
29.4.171	1 03 03	-29 42.9	15.73	0.65	2	4			
.172	1 03 03	-29 45.3	13.03	0.89	13	10			
.173	1 03 03	-29 45.9	15.32	0.85	3	5			
.174	1 03 08	-29 41.7	15.48	0.82	2	5			
.175	1 03 16	-29 41.2	11.38	0.66	14	11	-30 336		
.176	1 03 20	-29 48.3	14.30	0.76	7	7			
.177	1 03 34	-29 44.7	11.70	1.22	16	14	-30 339		
.178	1 03 37	-29 46.4	15.88	1.54	2	2			
.179	1 03 44	-29 41.4	11.99	0.75	11	12	-30 341		
.180	1 03 44	-29 42.4	14.04	1.00	5	7			
29.4.181	1 04 00	-29 46.1	15.04	0.72	3	6			
.182	1 04 01	-29 40.5	12.76	0.56	9	12			
.183	1 04 10	-29 48.2	13.71	0.71	7	9			
.184	1 04 16	-29 46.3	15.81	0.87	2	3			
.185	1 04 20	-29 41.0	13.00	1.22	9	10			
.186	1 04 22	-29 49.6	15.79	0.62	2	4			
.187	1 04 32	-29 48.4	15.88	0.88	2	2			
.188	1 04 42	-29 45.0	16.08	1.02	2	2			
.189	1 04 44	-29 41.5	13.44	0.94	8	11		370	
.190	1 04 54	-29 45.6	14.04	0.77	6	7			
29.4.191	1 05 31	-29 45.7	14.10	0.75	5	7		386	
.192	1 05 31	-29 47.8	13.43	0.69	9	9		387	
.193	1 05 43	-29 43.3	15.25	0.91	2	4			
.194	1 06 05	-29 44.8	14.69	0.59	5	6			
.195	1 06 05	-29 45.4	15.10	0.75	2	5			
.196	1 06 08	-29 48.1	15.02	0.75	3	5			
.197	1 06 09	-29 41.2	15.58	0.67	2	5			
.198	1 06 19	-29 44.7	14.39	0.74	5	6			
.199	1 06 20	-29 43.2	13.22	0.73	8	9			
.200	1 06 26	-29 46.4	14.85	0.89	5	5			
29.4.201	1 06 33	-29 40.7	16.12	0.84	2	2			
.202	1 06 48	-29 42.2	14.73	1.40	4	5			
.203	1 06 48	-29 44.3	15.68	0.91	2	3			
.204	1 06 48	-29 44.8	15.69	0.92	2	3			
.205	1 06 54	-29 45.5	15.49	1.57	2	2			*
.206	1 07 06	-29 48.5	15.80	0.73	2	4			
.207	1 07 08	-29 41.8	12.11	0.91	10	14	-30 364		
.208	1 07 13	-29 48.2	14.86	0.74	5	5			
.209	1 07 19	-29 42.0	16.15	0.74	2	2			
.210	1 07 25	-29 42.6	14.72	0.91	4	6			
29.4.211	1 07 30	-29 43.3	15.22	1.09	1	2			
.212	1 07 32	-29 41.2	14.31	0.93	4	6			
.213	1 08 08	-29 48.1	15.99	0.89	2	2			
.214	1 08 12	-29 49.8	15.46	0.59	2	4			
.215	1 08 26	-29 42.5	15.43	0.89	1	2			
.216	1 08 31	-29 44.2	14.27	0.72	1	1			
.217	1 08 41	-29 45.0	16.16	1.17	1	1			
.218	1 08 53	-29 47.3	15.34	1.09	1	2			
.219	1 08 55	-29 49.3	15.37	1.09	1	2			
.220	1 08 58	-29 43.6	14.70	1.24	1	1			
29.4.221	1 09 00	-29 42.0	16.29	0.79	1	1			
.222	1 09 02	-29 47.5	15.62	0.87	1	2			
.223	1 09 04	-29 45.4	9.71	1.08	5	3	-30 373	446	*
.224	1 09 15	-29 45.4	13.85	0.91					*
.225	1 09 17	-29 43.2	14.56	0.85	2	3			
.226	1 09 17	-29 45.1	15.62	0.42	1	2			
.227	1 09 34	-29 40.2	15.37	0.73	1	2			
.228	1 09 37	-29 45.-	13.53	0.79	4	5		454	
.229	1 09 40	-29 47.5	15.35	0.86	1	2			
.230	1 09 50	-29 48.7	14.16	0.90	3	3			
29.4.231	1 09 56	-29 49.1	15.25	0.56	1	1			
.232	1 10 01	-29 48.5	15.32	0.91	1	2			
.233	1 10 16	-29 43.4	14.44	1.07	2	1			
.234	1 10 16	-29 46.6	15.91	0.69	1	1			
.235	1 10 35	-29 47.6	15.84	0.58	1	1			
.236	1 10 48	-29 47.4	15.83	1.36	1	1			
.237	1 10 52	-29 48.2	14.85	1.28	3	1			
.238	1 10 54	-29 41.6	14.29	1.24	2	1			
.239	1 10 58	-29 48.6	14.80	1.01	3	2			
29.5.001	0 43 55	-29 50.6	14.40	1.57	2	3			
.002	0 43 56	-29 52.1	14.39	0.68	2	3			
.003	0 43 57	-29 51.0	14.70	0.84	2	3			*
.004	0 43 58	-29 50.9	13.25	0.67	4	5			*
.005	0 44 02	-29 52.8	15.24	0.96	1	2			
.006	0 44 06	-29 53.0	12.09	0.65	6	7	-30 226		*
.007	0 44 08	-29 53.0	14.44	0.86	2	3			
.008	0 44 12	-29 50.0	12.44	0.89	4	5			
.009	0 44 17	-29 58.9	15.38	0.79	1	2			
.010	0 44 18	-29 53.4	14.07	0.85	2	4			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
29.5.011	0 44 22	-29 58.8	13.31	0.61	4	5			
.012	0 44 50	-29 54.3	15.64	0.75	1	2			
.013	0 45 00	-29 58.4	13.74	0.61	3	5			
.014	0 45 03	-29 58.6	11.44	0.59	5	6	-30 233		
.015	0 45 10	-29 53.6	11.62	1.07	6	7	-30 236		
.016	0 45 25	-29 53.6	12.37	0.51	5	7	-30 239		
.017	0 45 43	-29 57.7	14.50	1.09	2	3			
.018	0 45 45	-29 50.5	12.18	0.70	5	8	-30 242	45	
.019	0 45 54	-29 56.5	15.32	0.64	1				
.020	0 46 03	-29 51.4	15.23	0.71	1	5			
29.5.021	0 46 14	-29 54.7	13.02	0.73	5	7	-30 245		
.022	0 46 15	-29 50.4	14.07	0.90	1	5			
.023	0 46 19	-29 55.4	12.94	0.44	5	8			
.024	0 46 20	-29 52.2	14.26	0.65	2	5			
.025	0 46 22	-29 51.1	14.80	0.55	2	4			
.026	0 46 24	-29 53.4	11.45	0.67	8	8	-30 246		
.027	0 46 26	-29 51.2	15.48	0.76	1	3			
.028	0 46 29	-29 52.4	14.42	0.56	2	4			
.029	0 46 37	-29 50.5	15.10	0.83	1	4			
.030	0 46 38	-29 57.9	15.50	0.62	1	3			
29.5.031	0 46 39	-29 51.0	15.48	0.76	1	3			
.032	0 46 39	-29 56.4	15.23	0.84	1	3			
.033	0 46 43	-29 58.4	15.31	0.61	1	4			
.034	0 46 48	-29 56.4	13.82	0.75	4	6			
.035	0 46 49	-29 54.2	15.74	0.70	1	3			
.036	0 46 53	-29 50.5	14.80	1.05	3	5			
.037	0 47 21	-29 59.2	15.03	1.10	1	3			
.038	0 47 45	-29 54.6	14.85	1.15	3	4		89	
.039	0 47 54	-29 53.3	13.36	1.05	6	8			
.040	0 47 55	-29 52.1	15.57	1.19	1	2			
29.5.041	0 48 02	-29 50.2	15.1	0.91	1	3			
.042	0 48 07	-29 51.5	15.32	0.71	1	4			
.043	0 48 13	-29 52.8	14.73	1.14	3	4			
.044	0 48 16	-29 53.8	14.06	0.56	4	8			
.045	0 48 16	-29 58.5	15.44	1.23	1	2			
.046	0 48 17	-29 57.0	14.89	0.63	1	6			
.047	0 48 20	-29 58.2	14.05	0.84	4	8			
.048	0 48 27	-29 52.5	14.42	0.81	4	6			
.049	0 48 34	-29 55.0	13.22	0.68	9	13			
.050	0 48 51	-29 57.7	9.48	1.14	11	12	HD 4954	103	
29.5.051	0 49 01	-29 59.8	14.43	0.92	4	7			
.052	0 49 12	-29 56.5	14.35	1.56	4	7			
.053	0 49 13	-29 50.9	15.57	0.83	1	4			
.054	0 49 23	-29 53.6	15.79	0.46	1	3			
.055	0 49 25	-29 53.4	10.94	1.08	12	14	-30 260	109	
.056	0 49 27	-29 55.9	15.50	0.74	1	5			
.057	0 49 29	-29 52.1	14.23	1.09	4	7			
.058	0 49 36	-29 55.2	14.13	0.52	5	7			
.059	0 49 54	-29 56.8	13.17	0.99	8	13			
.060	0 50 05	-29 54.3	14.49	0.64	4	8			
29.5.061	0 50 08	-29 54.7	14.28	0.92	4	7			
.062	0 50 13	-29 58.4	10.70	0.45	12	13	-30 263	124	
.063	0 50 17	-29 57.3	14.32	0.48	4	8			
.064	0 50 33	-29 50.9	11.14	1.05	12	14	-30 264	129	
.065	0 50 33	-29 57.7	14.93	0.91	3	8			
.066	0 50 35	-29 54.4	15.47	1.44	1	2			
.067	0 50 36	-29 59.0	12.73	0.53	9	15			
.068	0 50 47	-29 54.4	14.83	1.32	4	5		135	
.069	0 50 49	-29 53.7	15.66	1.10	1	3			
.070	0 51 14	-29 50.5	14.64	0.40	7	14			
29.5.071	0 51 28	-29 50.9	14.41	1.19	5	8			
.072	0 51 40	-29 59.0	15.53	1.25	1	4			
.073	0 51 47	-29 57.9	12.25	0.66	11	17	-30 270		
.074	0 51 58	-29 55.8	13.75	0.90	7	10			
.075	0 52 03	-29 55.2	13.09	0.65	10	14			
.076	0 52 07	-29 53.7	12.30	0.72	12	16	-30 276		
.077	0 52 08	-29 50.0	13.08	0.97	7	10			
.078	0 52 10	-29 53.7	14.66	0.72	5	8			
.079	0 52 15	-29 56.0	15.40	0.61	2	4			
.080	0 52 18	-29 58.0	15.56	1.52	1	4			
29.5.081	0 52 24	-29 51.4	13.38	0.87	10	10			*
.082	0 52 35	-29 54.0	14.34	0.98	5	8			
.083	0 52 38	-29 51.8	15.53	1.47	2	3			
.084	0 52 41	-29 59.8	15.74	0.70	1	3			
.085	0 52 59	-29 55.1	14.40	0.93	4	8			
.086	0 53 02	-29 53.6	15.48	0.57	1	6			
.087	0 53 07	-29 52.8	13.33	0.63					*
.088	0 53 07	-29 52.9	14.93	1.23					*
.089	0 53 12	-29 56.0	14.58	1.49	4	6			
.090	0 53 16	-29 58.5	12.41	0.55	8	10			
29.5.091	0 53 19	-29 58.7	14.5	1.48	4	8			
.092	0 53 23	-29 56.9	9.41	1.14	9	10	HD 5425	169	
.093	0 53 24	-29 55.8	15.53	1.31	1	2			
.094	0 53 32	-29 55.7	13.71	0.69	8	13			
.095	0 53 36	-29 54.0	14.90	0.63	5	10			
.096	0 53 45	-29 58.9	15.14	0.71	2	7			
.097	0 53 51	-29 57.8	14.04	0.67	5	10			
.098	0 53 54	-29 52.7	14.67	0.54	5	9			
.099	0 53 56	-29 55.7	15.36	0.81	2	5			
.100	0 54 01	-29 58.3	14.65	1.38	4	8			
29.5.101	0 54 16	-29 56.4	14.96	0.18	3	10			
.102	0 54 25	-29 56.0	13.70	0.62	6	15			
.103	0 54 27	-29 55.2	15.17	0.68	2	8			
.104	0 54 34	-29 58.8	15.57	1.03	2	4			
.105	0 55 12	-29 59.7	13.54	0.34	7	12			
.106	0 55 13	-29 54.3	13.44	0.51	7	13			
.107	0 55 18	-29 57.8	15.46	0.80	2	5			
.108	0 55 19	-29 50.4	15.10	0.62	2	7			
.109	0 55 40	-29 54.3	13.25	0.79	8	11			
.110	0 55 47	-29 52.6	12.96	0.45	8	12			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
29.5.111	0 55 52	-29 57.6	14.23	0.84	4	7			
.112	0 56 02	-29 51.3	14.41	0.65	4	6			
.113	0 56 07	-29 58.1	14.49	0.71	4	6			
.114	0 56 09	-29 54.8	13.84	0.86	6	8			
.115	0 56 18	-29 53.5	13.73	0.54	6	11			
.116	0 56 26	-29 52.8	14.91	0.66	4	6			
.117	0 56 30	-29 50.7	15.36	0.51	2	5		221	
.118	0 56 30	-29 56.9	15.50	0.91	2	3			
.119	0 56 36	-29 59.3	15.37	0.68	2	5			
.120	0 56 38	-29 50.5	13.83	0.64	6	10			
29.5.121	0 56 39	-29 58.9	15.23	0.91	2	5			
.122	0 56 49	-29 58.8	14.45	0.69	4	6			
.123	0 57 05	-29 53.6	15.41	0.93	2	4			
.124	0 57 06	-29 59.5	15.62	0.54	2	4			
.125	0 57 11	-29 56.6	14.80	0.50	5	6			*
.126	0 57 15	-29 50.0	11.48	0.46	12	11	-30 302	239	
.127	0 57 18	-29 55.8	13.97	0.60	6	8			
.128	0 57 26	-29 59.5	12.70	0.65	10	12			
.129	0 57 29	-29 52.6	14.23	0.87	5	4			
.130	0 57 35	-29 53.4	14.36	0.59	5	4			
29.5.131	0 57 36	-29 50.2	15.56	0.95	2	2			
.132	0 57 40	-29 55.4	14.65	0.59	5	3			
.133	0 57 42	-29 50.9	15.66	0.76	2	2			
.134	0 57 49	-29 56.3	10.82	0.54	10	7	-30 303	249	*
.135	0 57 53	-29 59.8	13.42	0.70	9	6			
.136	0 57 56	-29 54.0	16.10	0.45	2	2			
.137	0 58 01	-29 59.9	12.70	1.07	9	6		253	
.138	0 58 20	-29 54.7	16.22	1.11	2	1			
.139	0 58 21	-29 54.9	12.48	0.70	12	9	-30 304		
.140	0 58 25	-29 53.5	13.44	1.06	10	6			
29.5.141	0 58 28	-29 50.5	11.53	0.90	13	9	-30 305		
.142	0 58 33	-29 59.9	13.25	0.52	10	7			
.143	0 58 50	-29 58.2	15.70	1.26	2	1			
.144	0 58 51	-29 55.2	16.24	1.32	2	1			
.145	0 58 59	-29 51.2	14.95	0.83	5	4			
.146	0 59 04	-29 57.8	14.69	0.75	5	4			
.147	0 59 11	-29 56.5	15.93	1.23	2	2			
.148	0 59 18	-29 53.5	15.64	0.68	2	3			
.149	0 59 36	-29 56.8	14.69	1.51	5	3			
.150	0 59 48	-29 53.0	15.53	0.58	2	3			
29.5.151	0 59 52	-29 50.9	15.87	1.38	2	2			
.152	1 00 04	-29 50.9	14.15	1.11	6	4			
.153	1 00 04	-29 52.3	13.94	0.53	7	7			
.154	1 00 16	-29 55.9	16.14	0.53	2	2			
.155	1 00 17	-29 50.5	15.51	0.45	2	4			
.156	1 00 18	-29 58.5	15.07	0.66	3	5			
.157	1 00 38	-29 54.2	15.48	1.15	2	2			
.158	1 00 38	-29 54.9	14.37	0.66	5	5			
.159	1 00 41	-29 52.4	16.19	1.11	2	2			
.160	1 00 46	-29 50.1	11.06	0.66	11	8	-30 321	299	*
29.5.161	1 00 46	-29 59.4	16.23	0.72	2	2			
.162	1 00 47	-29 50.1	13.72	0.78	6	4			*
.163	1 01 15	-29 57.0	14.64	0.55	6	5			
.164	1 01 19	-29 59.3	14.29	0.70	6	6			
.165	1 01 21	-29 57.3	14.90	0.44	5	5			
.166	1 01 22	-29 58.5	15.44	0.85	2	3			
.167	1 01 23	-29 53.1	16.07	0.86	2	2			
.168	1 01 28	-29 58.4	13.58	0.69	8	8			
.169	1 01 37	-29 53.3	13.56	0.88	9	9			
.170	1 01 41	-29 50.5	10.84	0.53	13	10	-30 328	316	
29.5.171	1 01 41	-29 51.0	14.64	0.70	6	6			
.172	1 01 47	-29 51.8	15.65	0.65	2	4			
.173	1 02 00	-29 54.8	11.92	0.70	15	11	-30 331		
.174	1 02 19	-29 50.2	15.24	0.99	3	5			
.175	1 02 19	-29 55.8	15.89	1.21	3	2			
.176	1 02 43	-29 57.2	16.01	0.67	3	3			
.177	1 03 02	-29 53.4	16.18	0.92	3	3			
.178	1 03 12	-29 54.1	14.42	1.39	7	6			
.179	1 03 19	-29 58.0	15.73	0.95	2	2			
.180	1 03 24	-29 56.7	14.82	0.75	6	6			
29.5.181	1 03 30	-29 58.6	14.39	0.76	6	6			
.182	1 03 36	-29 57.5	15.81	1.64	2	2			
.183	1 03 39	-29 50.3	12.58	0.59	11	11	-30 340		
.184	1 03 43	-29 58.4	14.17	0.59	5	8			
.185	1 03 51	-29 50.5	16.26	0.89	2	2			
.186	1 03 52	-29 58.1	14.51	0.75	5	5			
.187	1 03 53	-29 52.4	15.68	0.84	2	3			
.188	1 03 53	-29 53.4	16.30	0.81	2	2			*
.189	1 04 06	-29 57.5	15.56	1.57	2	2			
.190	1 04 20	-29 57.8	15.75	1.03	2	3			
29.5.191	1 04 27	-29 54.1	14.64	0.89	5	6			
.192	1 04 38	-29 52.9	9.37	0.37	10	4	HD 6670	368	
.193	1 04 45	-29 56.4	15.90	0.72	2	2			
.194	1 04 48	-29 54.1	12.61	0.77	10	11	-30 349		
.195	1 04 52	-29 55.4	14.14	0.75	5	7			
.196	1 05 06	-29 55.2	14.12	0.91	5	6			
.197	1 05 06	-29 58.3	15.07	0.81	3	5			
.198	1 05 07	-29 55.8	12.35	0.83	12	9	-30 352		
.199	1 05 12	-29 50.6	15.97	1.55	2	2			
.200	1 05 15	-29 53.5	16.03	1.01	2	2			
29.5.201	1 05 20	-29 53.2	15.25	0.75	2	5			
.202	1 05 30	-29 59.7	13.73	0.62	7	7			
.203	1 05 31	-29 51.1	14.77	0.92	5	4			*
.204	1 05 33	-29 51.2	14.36	0.88	5	5			
.205	1 05 42	-29 59.1	16.14	0.75	2	2			
.206	1 05 59	-29 53.5	15.89	0.64	2	2			
.207	1 06 02	-29 58.6	15.77	0.63	2	3			
.208	1 06 05	-29 57.9	15.56	0.66	2	3			
.209	1 06 18	-29 50.6	11.81	1.03	12	10	-30 358		
.210	1 06 20	-29 55.3	15.67	0.73	2	3			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
29.5.211	1 06 25	-29 54.6	16.05	0.60	2	2			
.212	1 06 28	-29 50.8	15.96	0.67	2	2		410	
.213	1 06 29	-29 53.3	8.20	0.49			HD 6868	411	*
.214	1 06 35	-29 56.7	13.95	0.55	6	7			
.215	1 06 47	-29 56.0	13.28	0.65	9	8			
.216	1 07 00	-29 56.8	15.16	1.59	2	2			
.217	1 07 14	-29 54.5	15.39	1.04	2	3			
.218	1 07 19	-29 58.2	16.07	0.64	2	2			
.219	1 07 21	-29 57.3	14.89	0.76	5	5			
.220	1 07 24	-29 54.4	15.46	1.12	2	2			
29.5.221	1 07 27	-29 55.4	14.65	0.88	5	5			
.222	1 07 28	-29 57.8	14.50	0.75	5	5			
.223	1 07 36	-29 56.0	13.34	0.64	7	8			
.224	1 07 54	-29 52.5	16.25	0.79	2	2			
.225	1 07 55	-29 56.8	15.49	1.56	2	2			
.226	1 07 59	-29 50.8	15.48	0.90	2	4			*
.227	1 08 08	-29 53.7	15.08	1.04	2	4			
.228	1 08 30	-29 53.8	16.15	0.79	1	1			
.229	1 08 30	-29 55.3	13.87	0.79	4	4			
.230	1 08 35	-29 55.6	14.41	0.63	3	4			
29.5.231	1 08 36	-29 58.8	12.03	0.69	5	6	-30 372		
.232	1 08 37	-29 52.1	14.51	0.73	3	3			
.233	1 08 37	-29 54.2	14.39	0.95	3	3			
.234	1 08 37	-29 58.8	15.32	1.03	1	2			
.235	1 08 38	-29 54.4	15.38	0.86	1	2			
.236	1 08 39	-29 53.9	14.14	1.18	3	3			
.237	1 08 43	-29 58.1	15.39	0.64	1	3			
.238	1 08 45	-29 54.0	13.65	0.88	4	4			
.239	1 08 57	-29 57.1	14.67	0.82	2	3			
.240	1 08 59	-29 54.5	15.77	0.81	1	1			
29.5.241	1 09 09	-29 51.3	16.01	0.63	1	2			
.242	1 09 20	-29 52.1	14.37	0.72	3	3			
.243	1 09 23	-29 50.4	15.23	0.91	1	2			
.244	1 09 31	-29 55.6	15.64	0.63	1	2			
.245	1 09 35	-29 50.2	13.34	0.82	5	6			
.246	1 09 47	-29 57.5	15.21	0.57	1	2			
.247	1 09 57	-29 57.7	13.22	1.02	4	3			
.248	1 10 11	-29 57.3	15.52	1.69	1	1			
.249	1 10 16	-29 50.6	15.96	1.06	1	1			
.250	1 10 17	-29 54.5	14.56	1.07	2	1			
29.5.251	1 10 19	-29 51.3	14.29	0.62	3	2			
.252	1 10 27	-29 58.9	12.98	1.01	3	2			
.253	1 10 29	-29 52.7	13.76	0.70	2	2			
.254	1 10 34	-29 52.9	13.19	0.69	3	2			
.255	1 10 36	-29 57.6	9.38	0.62	3	2	HD 7310	467	
.256	1 10 46	-29 51.6	14.72	1.41	2	1			
.257	1 10 52	-29 51.8	15.23	0.90	1	1			
.258	1 10 55	-29 56.1	13.87	1.65	2	1			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
30.0.001	0 43 44	-30 03.1	12.54	0.63	5	6			
.002	0 43 45	-30 07.6	14.47	0.59	2	3			
.003	0 44 06	-30 00.5	13.49	1.32	3	4			
.004	0 44 06	-30 03.3	15.45	0.98	1	2			*
.005	0 44 20	-30 05.0	15.33	0.83	1	2			
.006	0 44 45	-30 06.6	15.65	0.85	1	1			
.007	0 44 55	-30 00.1	15.61	1.44	1	1			
.008	0 44 56	-30 01.8	15.66	1.01	1	1			
.009	0 45 00	-30 02.8	14.84	0.86	2	3			
.010	0 45 19	-30 07.6	14.40	0.98	2	3			
30.0.011	0 45 22	-30 02.1	14.63	1.11	2	3			
.012	0 45 22	-30 07.3	11.68	0.62	6	7	-30 237		
.013	0 45 27	-30 06.3	11.75	1.00	6	7	-30 239		
.014	0 45 33	-30 06.3	14.48	0.69	2	3			
.015	0 45 35	-30 01.5	15.50	0.71	1	2			
.016	0 45 35	-30 09.0	15.43	1.21	1	1			
.017	0 45 51	-30 09.3	14.7:	0.7:					*
.018	0 45 51	-30 09.3	15.6:	0.6:					*
.019	0 46 03	-30 06.8	11.81	0.97	6	8	-30 243		
.020	0 46 05	-30 08.0	15.47	1.25	1	1			
30.0.021	0 46 27	-30 09.0	13.46	0.45	4	5		61	
.022	0 46 40	-30 02.6	15.12	0.86	1	4			
.023	0 46 50	-30 09.3	13.51	0.73	4	7			
.024	0 46 57	-30 07.6	15.36	0.83	1	3			
.025	0 47 06	-30 04.6	14.82	0.81	2	4			
.026	0 47 09	-30 08.1	15.75	0.74	1	2			
.027	0 47 15	-30 00.3	15.11	0.85	1	4			
.028	0 47 49	-30 05.5	14.38	0.79	4	5			
.029	0 47 49	-30 07.6	15.74	0.71	1	2			
.030	0 47 55	-30 01.5	14.03	1.28	4	5			
30.0.031	0 48 09	-30 09.6	15.56	0.59	1	4			
.032	0 48 16	-30 06.6	15.73	1.02	1	2			
.033	0 48 32	-30 05.6	15.45	0.67	1	4			
.034	0 48 47	-30 07.6	13.17	0.55	7	14			
.035	0 48 48	-30 03.8	13.83	0.94	6	9			
.036	0 48 57	-30 06.3	13.80	0.61	6	14			
.037	0 49 01	-30 07.3	15.66	0.83	1	5			
.038	0 49 08	-30 08.8	14.83	1.07	4	8			
.039	0 49 12	-30 02.8	15.77	0.62	1	5			
.040	0 49 21	-30 09.3	14.78	0.75	4	8			
30.0.041	0 49 47	-30 03.0	14.98	0.64	3	8			
.042	0 49 48	-30 07.8	14.15	0.74	4	10			
.043	0 49 57	-30 09.3	15.24	0.49	1	7			
.044	0 50 03	-30 03.5	12.70	1.06	9	14			
.045	0 50 08	-30 04.1	15.72	1.03	1	3			
.046	0 50 37	-30 07.8	11.79	0.69	12	16	-30 265		
.047	0 51 00	-30 07.5	13.49	0.65	7	14			
.048	0 51 26	-30 04.1	15.77	0.76	1	4			
.049	0 51 26	-30 06.6	13.33	0.75	9	15			
.050	0 51 31	-30 07.3	15.47	1.11	1	4			
30.0.051	0 51 32	-30 00.6	15.25	0.62	2	8			
.052	0 51 53	-30 04.5	13.98	0.80	6	11			
.053	0 51 54	-30 00.8	15.09	0.80	2	7			
.054	0 51 59	-30 07.1	13.05	0.60	9	15		154	
.055	0 52 03	-30 03.3	11.65	0.74	13	16	-30 272		
.056	0 52 07	-30 03.3	15.15	0.50	1	8			
.057	0 52 09	-30 00.3	12.52	0.53	10	17	-30 274		
.058	0 52 28	-30 01.8	15.77	0.92	1	4			
.059	0 52 41	-30 09.1	14.07	0.58	4	13			
.060	0 52 44	-30 04.5	13.49	0.48	7	11			
30.0.061	0 52 44	-30 08.3	15.02	0.92	2	9			
.062	0 52 48	-30 02.6	14.52	0.70	4	9			
.063	0 53 06	-30 04.1	13.30	0.89	8	13			
.064	0 53 07	-30 05.3	13.48	0.70	7	13			
.065	0 53 39	-30 06.8	15.67	0.53	1	6			
.066	0 54 01	-30 08.8	15.48	0.88	1	5			
.067	0 54 17	-30 00.6	14.35	1.44	5	9			*
.068	0 54 22	-30 02.6	12.78	0.70	9	16			
.069	0 54 30	-30 01.8	10.28	0.20	9	11	HD 5546	186	
.070	0 54 32	-30 08.3	15.27	1.27	2	4			
30.0.071	0 54 39	-30 02.0	10.34	1.01	9	14	-30 286	190	
.072	0 54 49	-30 09.1	15.23	0.72	2	8			
.073	0 54 56	-30 08.3	14.72	0.04	4	9		194	
.074	0 54 57	-30 06.6	14.64	0.54	4	8			
.075	0 55 08	-30 08.6	15.76	0.34	2	5			
.076	0 55 09	-30 03.3	14.23	0.43	4	9			
.077	0 55 32	-30 05.3	14.64	0.65	4	7			
.078	0 55 37	-30 01.6	13.96	1.14	6	7			
.079	0 55 45	-30 07.5	11.05	1.15	10	14	-30 294	213	
.080	0 55 59	-30 04.0	12.32	0.59	10	13	-30 295		
30.0.081	0 56 05	-30 04.1	14.02	0.54	5	9			
.082	0 56 18	-30 07.8	15.44	0.47	2	5			
.083	0 56 22	-30 03.1	14.73	0.62	4	7			
.084	0 56 24	-30 00.1	15.71	0.58	2	5			
.085	0 56 25	-30 09.1	15.55	0.57	2	4			
.086	0 56 45	-30 02.6	14.99	0.99	4	6			
.087	0 56 46	-30 09.3	15.76	0.50	2	4			
.088	0 56 48	-30 07.5	14.79	0.54	5	6			
.089	0 56 49	-30 00.6	13.69	1.40	7	6			
.090	0 56 59	-30 08.5	12.84	0.70	10	12			
30.0.091	0 56 59	-30 09.6	15.27	0.86	2	4			
.092	0 57 03	-30 00.6	15.57	0.52	2	4			
.093	0 57 03	-30 09.0	14.02	0.74	6	8			
.094	0 57 10	-30 00.8	11.07	0.68	12	11	-30 301	238	
.095	0 57 26	-30 09.8	15.36	0.80	2	4			
.096	0 57 44	-30 05.3	13.80	0.43	6	6			
.097	0 57 45	-30 09.0	16.26	0.37	2	2			
.098	0 57 48	-30 07.6	14.69	0.63	5	3			
.099	0 58 11	-30 07.1	13.21	0.56	9	6			
.100	0 58 18	-30 05.6	13.93	0.66	6	5			

NO	R.A. (1950.0)	DECL.	V	B-V	NV	NB	HD/CD	PE	Q
30.0.101	0 58 18	-30 06.0	15.29	0.64	2	2			*
.102	0 58 18	-30 06.1	15.93	0.50	2	2			*
.103	0 58 23	-30 02.0	12.77	0.59	9	9			
.104	0 58 24	-30 04.8	14.88	0.65	4	4			
.105	0 58 25	-30 04.0	14.79	0.71	5	4			
.106	0 58 33	-30 05.3	13.80	0.74	6	5			
.107	0 58 34	-30 09.6	13.94	1.19	6	4			
.108	0 58 36	-30 06.3	15.58	0.68	2	2			
.109	0 58 39	-30 01.5	14.88	0.85	5	4			
.110	0 58 40	-30 01.0	16.14	0.67	2	1			
30.0.111	0 58 44	-30 00.1	13.86	0.55	7	7			
.112	0 58 44	-30 03.3	16.01	0.64	2	1			
.113	0 59 05	-30 00.8	13.78	0.71	7	7			
.114	0 59 19	-30 09.8	14.67	0.66	5	4			
.115	0 59 20	-30 06.1	14.69	1.15	5	4			
.116	0 59 22	-30 06.3	14.32	0.62	5	6			
.117	0 59 23	-30 03.1	15.29	0.71	2	4			
.118	0 59 30	-30 07.1	15.85	1.15	2	2			
.119	0 59 31	-30 02.3	13.21	0.65	10	8			
.120	0 59 33	-30 01.6	12.13	0.98	12	10	-30 313		
30.0.121	0 59 34	-30 06.6	14.32	0.58	5	6			
.122	0 59 45	-30 04.3	14.56	0.98	5	4			
.123	0 59 46	-30 07.8	13.05	0.39	10	9			
.124	0 59 54	-30 07.3	16.17	1.24	2	2			
.125	0 59 57	-30 07.3	15.45	0.89	2	3			
.126	1 00 04	-30 03.8	13.42	0.56	10	8			
.127	1 00 08	-30 01.3	14.53	0.60	5	5			
.128	1 00 20	-30 09.3	14.33	0.92	5	5			
.129	1 00 24	-30 05.8	15.44	1.40	2	2			
.130	1 00 26	-30 04.6	14.60	0.93	5	4			
30.0.131	1 00 26	-30 07.6	16.15	1.01	2	2			
.132	1 00 28	-30 02.8	13.30	0.82	9	8			
.133	1 00 29	-30 04.3	14.03	0.73	6	6			
.134	1 00 38	-30 09.0	15.98	0.82	2	2			
.135	1 00 40	-30 09.1	13.17	0.55	9	8			
.136	1 00 47	-30 02.6	11.61	0.57	13	10	-30 323		
.137	1 00 49	-30 07.1	15.94	1.52	2	2			
.138	1 00 51	-30 00.0	11.26	-0.03	11	9	-30 324		
.139	1 00 53	-30 08.1	16.24	0.56	2	2			
.140	1 00 57	-30 05.0	15.51	1.55	2	2			
30.0.141	1 01 03	-30 01.0	15.39	0.50	2	4			
.142	1 01 06	-30 02.3	15.48	0.80	2	3			
.143	1 01 13	-30 03.8	15.06	1.29	4	3			
.144	1 01 17	-30 07.3	15.13	0.82	2	4			
.145	1 01 26	-30 04.8	15.17	1.68	3	2			
.146	1 01 29	-30 06.0	14.19	0.60	6	6			
.147	1 01 35	-30 07.0	14.76	1.01	6	4			
.148	1 01 38	-30 01.6	15.52	1.43	2	2			
.149	1 01 39	-30 01.3	14.56	1.28	6	5			
.150	1 01 51	-30 02.6	15.95	0.96	2	2			
30.0.151	1 01 53	-30 09.6	12.77	0.72	11	10			
.152	1 01 55	-30 06.3	16.15	0.77	2	2			
.153	1 01 58	-30 02.6	14.99	1.63	6	2			
.154	1 01 59	-30 05.3	13.66	0.94	8	8			
.155	1 02 06	-30 06.6	15.24	0.97	3	5			
.156	1 02 06	-30 07.3	15.32	1.42	3	2			
.157	1 02 07	-30 03.8	8.78	0.49			HD 6390	324	*
.158	1 02 08	-30 06.6	14.39	0.89	6	6			
.159	1 02 09	-30 03.8	15.54	0.67	2	1			
.160	1 02 20	-30 06.6	15.63	1.60	2	2			
30.0.161	1 02 26	-30 02.1	15.67	0.66	2	4			
.162	1 02 34	-30 00.3	15.22	0.85	2	5			
.163	1 03 06	-30 00.3	15.74	0.61	2	4			
.164	1 03 06	-30 01.8	16.24	1.21	2	2			
.165	1 03 06	-30 07.6	16.09	0.99	2	2			
.166	1 03 24	-30 01.3	15.92	1.46	2	2			
.167	1 03 32	-30 01.8	11.77	0.65	13	11	-30 337		
.168	1 03 34	-30 05.1	13.08	0.54	10	11	-30 338		
.169	1 03 37	-30 04.6	12.64	0.69	10	12			
.170	1 03 43	-30 03.5	14.90	0.76	5	6			
30.0.171	1 03 45	-30 00.5	15.75	1.03	2	2			
.172	1 03 47	-30 03.8	15.75	1.31	2	2			
.173	1 03 51	-30 04.1	13.90	0.60	6	8			
.174	1 03 55	-30 00.6	14.74	1.45	5	5			
.175	1 03 59	-30 03.1	12.22	0.50	12	12	-30 343		
.176	1 04 06	-30 09.8	14.93	0.93	5	6			
.177	1 04 07	-30 07.8	14.48	0.48	5	7			
.178	1 04 19	-30 02.6	13.85	0.69	7	8			
.179	1 04 20	-30 06.0	15.66	1.32	2	2			
.180	1 04 25	-30 01.8	15.78	1.05	2	2			
30.0.181	1 04 36	-30 09.3	11.22	0.97	11	10	-30 347	367	
.182	1 04 40	-30 00.3	15.69	1.33	2	2			
.183	1 04 40	-30 02.6	14.17	0.90	5	7			
.184	1 04 41	-30 02.3	13.30	0.52	10	10			
.185	1 05 00	-30 03.3	14.11	0.73	5	6			
.186	1 05 11	-30 03.8	13.90	0.65	7	7			
.187	1 05 16	-30 02.3	13.10	1.27	7	6			
.188	1 05 23	-30 08.1	13.31	0.90	9	8			
.189	1 05 43	-30 04.0	13.96	1.12	6	6			
.190	1 05 53	-30 03.1	13.92	1.07	7	6			
30.0.191	1 06 04	-30 08.6	13.45	0.63	8	8			
.192	1 06 10	-30 06.8	15.68	0.81	2	3			
.193	1 06 21	-30 03.0	16.21	0.77	2	2			
.194	1 06 33	-30 05.1	13.86	0.63	6	7			
.195	1 06 37	-30 07.1	11.70	0.54	13	9	-30 361		
.196	1 06 42	-30 07.1	15.49	1.19	2	2			
.197	1 06 49	-30 00.8	15.23	1.13	2	3			
.198	1 07 18	-30 01.1	14.08	0.65	6	6			
.199	1 07 27	-30 02.6	13.72	1.14	5	6			
.200	1 07 38	-30 07.3	16.09	0.80	1	2			

NO	R.A. (1950.0)	DECL.	V	B-V	NV	NB	HD/CD	PE	R
30.0.201	1 07 55	-30 05.0	11.47	0.57	6	9	-30 367	425	
.202	1 07 56	-30 01.6	15.96	1.45	1	2			
.203	1 08 06	-30 03.3	12.45	0.90	7	9	-30 368		
.204	1 08 27	-30 08.1	14.15	0.55	2	4			
.205	1 08 30	-30 03.0	15.73	0.59	1	2			
.206	1 08 41	-30 06.8	15.83	1.47	1	1			
.207	1 08 42	-30 04.0	16.23	0.90	1	1			
.208	1 08 49	-30 02.0	15.34	0.45	1	2			
.209	1 08 50	-30 00.5	15.43	1.01	1	2			
.210	1 08 56	-30 09.3	15.84	0.56	1	2			
30.0.211	1 08 52	-30 00.5	16.21	1.11	1	1			
.212	1 08 56	-30 03.6	14.80	0.56	2	3			
.213	1 09 05	-30 01.0	13.33	0.57	4	5			
.214	1 09 07	-30 05.3	12.25	0.89	5	6	-30 374		
.215	1 09 09	-30 00.8	13.87	0.70	3	4			
.216	1 09 14	-30 01.6	14.52	1.04	2	3			
.217	1 09 18	-30 08.8	16.00	0.84	1	1			
.218	1 09 21	-30 00.8	13.06	0.65	4	5			
.219	1 09 24	-30 07.1	14.78	0.88	2	2			
.220	1 09 26	-30 01.8	15.71	0.69	1	1			
30.0.221	1 09 31	-30 07.3	16.07	0.41	1	1			
.222	1 10 08	-30 07.8	14.91	0.72	2	1			
.223	1 10 13	-30 07.1	13.57	0.38	3	2			
.224	1 10 15	-30 04.6	15.60	1.55	1	1			
.225	1 10 17	-30 09.1	15.45	1.07	1	1			
.226	1 10 18	-30 00.6	16.14	1.26	1	1			
.227	1 10 31	-30 03.3	14.71	0.83	2	1			
.228	1 10 34	-30 02.3	10.37	1.01	5	3	-30 377	466	
.229	1 10 48	-30 03.1	11.40	0.64	5	3	-30 380		
.230	1 10 49	-30 05.8	13.18	0.74	4	2			
30.0.231	1 10 53	-30 09.5	15.21	0.78	1	1			
.232	1 10 55	-30 01.3	15.37	0.76	1	1			
.233	1 10 56	-30 09.0	11.89	0.64	5	3	-30 382		
.234	1 11 03	-30 00.6	16.08	0.65	1	1			
30.1.001	0 43 50	-30 16.5	11.69	0.65	6	7	-30 224		
.002	0 44 01	-30 12.8	15.57	0.81	1	2			
.003	0 44 21	-30 12.3	15.10	0.57	1	3			
.004	0 44 26	-30 11.0	12.45	0.51	5	7	-30 229		
.005	0 44 30	-30 16.6	15.63	0.84	1	2			
.006	0 44 42	-30 12.1	15.11	0.94	1	2			
.007	0 44 52	-30 18.5	15.52	0.87	1	2			
.008	0 44 52	-30 19.1	14.20	1.02	2	3			
.009	0 45 00	-30 13.8	15.02	0.87	1	3			
.010	0 45 03	-30 14.8	13.62	1.02	3	4			
30.1.011	0 45 11	-30 19.3	15.22	0.75	1	2			
.012	0 45 27	-30 17.8	13.35	0.75	4	5			
.013	0 45 30	-30 14.1	14.96	0.59	2	3			
.014	0 45 36	-30 17.1	13.94	1.01	3	4			
.015	0 45 39	-30 12.6	12.88	0.64	4	6			
.016	0 45 39	-30 19.8	15.58	0.60	1	2			
.017	0 45 58	-30 19.5	14.77	0.38	2	4			
.018	0 46 00	-30 11.1	15.62	0.61	1	3			
.019	0 46 02	-30 19.0	15.38	0.56	1	3			
.020	0 46 13	-30 19.5	13.70	0.60	3	5			
30.1.021	0 46 30	-30 12.3	15.40	1.28	1	1			
.022	0 46 35	-30 19.1	15.50	1.40	1	1			
.023	0 46 37	-30 16.8	11.81	0.81	6	7	-30 249		
.024	0 46 40	-30 13.6	15.61	0.63	1	2			
.025	0 46 46	-30 13.6	13.73	0.69	4	5			
.026	0 46 52	-30 13.8	15.35	0.64	1	2			
.027	0 47 02	-30 14.6	15.33	0.73	1	3			
.028	0 47 08	-30 19.6	14.59	0.85	3	3			
.029	0 47 13	-30 14.6	15.09	0.72	1	4			
.030	0 47 16	-30 13.6	15.62	1.56	1	2			
30.1.031	0 47 29	-30 18.3	14.45	0.97	3	4			
.032	0 48 01	-30 12.0	14.75	1.23	4	5			
.033	0 48 09	-30 11.3	12.16	0.40	9	10	-30 252		
.034	0 48 09	-30 14.5	11.51	0.16	10	8	-30 253		
.035	0 48 18	-30 15.8	15.11	0.69	2	7			
.036	0 48 23	-30 19.3	13.02	0.35	9	16			
.037	0 48 25	-30 10.1	13.98	0.63	5	11			
.038	0 48 25	-30 16.1	11.49	0.65	13	15	-30 255		
.039	0 48 32	-30 12.8	14.06	0.65	5	9			
.040	0 48 48	-30 18.8	11.98	0.58	12	16	-30 257		
30.1.041	0 48 51	-30 17.6	11.45	0.35	11	14	-30 259		
.042	0 48 58	-30 18.1	13.37	0.51	9	14			
.043	0 49 06	-30 14.1	15.60	0.68	1	6			
.044	0 49 17	-30 10.8	14.45	0.89	4	8			
.045	0 49 38	-30 18.3	14.83	0.91	4	8			
.046	0 49 43	-30 16.5	15.36	0.98	1	6			
.047	0 49 56	-30 19.0	15.67	0.29	1	7			
.048	0 50 04	-30 11.1	14.88	0.93	4	8			
.049	0 50 06	-30 15.8	13.61	0.73	7	13			
.050	0 50 07	-30 17.3	14.84	1.43	4	5			
30.1.051	0 50 25	-30 13.3	15.77	0.74	1	4			
.052	0 50 29	-30 19.3	15.63	0.65	1	6			
.053	0 50 32	-30 10.8	14.07	0.09	5	14			
.054	0 50 32	-30 17.6	13.93	0.91	6	10			
.055	0 50 38	-30 19.6	14.52	0.48	4	10			
.056	0 50 51	-30 16.8	14.94	0.71	4	7			
.057	0 51 08	-30 14.6	13.03	1.04	9	13			
.058	0 51 11	-30 18.8	14.95	0.57	3	8			
.059	0 51 12	-30 19.6	15.75	0.66	1	5			
.060	0 51 22	-30 15.6	15.64	0.80	1	5			

NO	R.A.	DEC.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
30.1.061	0 51 24	-30 12.1	14.63	0.48	4	9			
.062	0 51 31	-30 18.8	15.46	1.04	1	5			
.063	0 52 04	-30 17.3	14.54	0.66	5	9			
.064	0 52 10	-30 19.8	13.24	0.59	10	12			*
.065	0 52 10	-30 19.8	15.71	1.23					*
.066	0 52 12	-30 17.5	15.60	0.77	2	6			
.067	0 52 12	-30 18.0	15.25	1.39	2	5			
.068	0 52 15	-30 13.1	15.54	0.86	2	6			*
.069	0 52 38	-30 18.1	15.74	0.91	2				
.070	0 52 40	-30 19.6	13.93	0.63	7	12			
30.1.071	0 52 44	-30 15.3	14.90	1.24	5	6			
.072	0 52 45	-30 10.8	14.93	0.74	4	9			
.073	0 52 45	-30 11.3	15.15	1.55	2	4			
.074	0 53 10	-30 12.0	15.11	0.57	2	7			
.075	0 53 18	-30 18.0	15.00	0.55	3	7			
.076	0 53 22	-30 13.1	13.38	0.78	9	12			
.077	0 53 27	-30 12.8	13.35	1.04	8	12		170	
.078	0 53 34	-30 13.8	13.51	1.06	7	9			
.079	0 53 37	-30 16.3	14.99	1.45	4	5			
.080	0 53 48	-30 13.6	12.70	0.99	8	13	-30 280		
30.1.081	0 53 50	-30 14.8	15.39	0.48	1	7			
.082	0 53 50	-30 17.6	15.39	0.47	1	7			
.083	0 53 57	-30 16.6	13.89	0.80	6	10			
.084	0 54 15	-30 13.8	15.18	0.73	1	5			
.085	0 54 16	-30 17.1	13.54	0.88	5	11			
.086	0 54 32	-30 19.6	14.35	1.12	4	6			
.087	0 54 48	-30 13.8	14.95	0.70	4	7			
.088	0 55 03	-30 19.0	12.54	0.76	8	14			
.089	0 55 05	-30 14.3	15.70	1.16	2	3			
.090	0 55 06	-30 16.0	15.33	1.51	2	3			
30.1.091	0 55 06	-30 17.1	14.34	0.57	4	10			
.092	0 55 08	-30 16.1	9.88	0.89	8	10	-30 288	198	
.093	0 55 16	-30 10.8	12.62	0.50	8	13			
.094	0 55 31	-30 15.8	11.64	0.85	11	15	-30 290		
.095	0 55 33	-30 17.6	12.49	0.77	9	15	-30 293	208	
.096	0 55 34	-30 10.6	14.05	0.77	5	9			
.097	0 55 48	-30 18.8	12.91	0.56	8	13			
.098	0 56 25	-30 16.3	15.30	0.61	5	8			
.099	0 56 27	-30 11.3	13.35	0.64	9	12			
.100	0 56 31	-30 12.6	12.84	0.78	5	11			
30.1.101	0 56 38	-30 13.1	15.65	0.60	2	4			
.102	0 56 43	-30 17.8	14.58	0.78	4	7			
.103	0 56 51	-30 11.5	12.29	0.76	11	14		229	
.104	0 56 54	-30 19.0	15.24	0.99	2	5			
.105	0 57 02	-30 10.3	15.51	0.67	2	4			
.106	0 57 04	-30 13.3	13.17	0.57	9	11			
.107	0 57.12	-30 14.8	15.00	0.58	3	6			
.108	0 57 15	-30 15.0	13.50	0.87	7	10			
.109	0 57 44	-30 18.3	15.93	1.17	2	4			
.110	0 57 49	-30 11.8	15.29	0.56	2	1			
30.1.111	0 57 50	-30 13.5	16.23	0.63	2	1			
.112	0 58 14	-30 17.1	15.85	1.33	2	1			
.113	0 58 28	-30 18.8	13.82	0.60	5	8			
.114	0 58 29	-30 18.3	15.66	0.69	2	3			
.115	0 58 32	-30 17.5	16.00	0.65	2	2			
.116	0 58 33	-30 15.6	15.57	0.62	2	3			
.117	0 58 54	-30 13.8	11.29	0.59	11	9	-30 308		
.118	0 58 55	-30 13.3	14.91	1.39	6	3			
.119	0 59 06	-30 10.5	15.10	0.89	2	4			
.120	0 59 10	-30 14.1	13.93	0.82	10	7			
30.1.121	0 59 15	-30 11.8	13.12	1.03	10	8			
.122	0 59 15	-30 14.3	13.89	0.56	9	7			
.123	0 59 17	-30 16.1	14.21	1.98	5	3			
.124	0 59 19	-30 17.6	12.59	1.12	11	8	-30 311		
.125	0 59 23	-30 13.0	14.84	0.76	6	4			
.126	0 59 30	-30 14.1	15.76	0.93	3	2			
.127	0 59 36	-30 14.8	11.41	1.15	11	8			*
.128	0 59 36	-30 15.3	9.34	0.90	9	8	HD 6104	277	
.129	0 59 43	-30 15.6	14.06	0.80	5	5			
.130	0 59 44	-30 10.6	14.67	0.64	7	8			
30.1.131	0 59 44	-30 14.5	16.09	1.09	2	1			*
.132	0 59 56	-30 18.3	16.12	0.69	2	2			
.133	1 00 09	-30 13.0	13.37	0.86	9	8			
.134	1 00 18	-30 19.8	15.94	0.79	2	2			
.135	1 00 20	-30 14.3	14.63	0.74	5	5			
.136	1 00 20	-30 19.3	13.46	0.55	9	8			
.137	1 00 30	-30 13.5	15.69	0.14	2	4			
.138	1 00 34	-30 12.3	13.93	0.66	6	6			
.139	1 00 45	-30 11.5	14.68	0.66	5	5			
.140	1 00 46	-30 [illegible]	[illegible]	[illegible]	2	2			
30.1.141	1 00 47	-30 14.5	12.74	1.12	10	8	-30 322		
.142	1 00 47	-30 19.6	12.93	0.94	10	8			
.143	1 00 52	-30 15.8	12.42	0.98	11	9			
.144	1 00 57	-30 18.3	15.19	1.49	2	2			
.145	1 01 00	-30 10.1	12.79	1.03	9	8			
.146	1 01 11	-30 10.6	14.87	0.66	5	5			
.147	1 01 12	-30 12.3	13.92	0.94	6	6			*
.148	1 01 15	-30 10.0	15.65	0.62	2	3			
.149	1 01 19	-30 13.3	15.12	0.61	2	4			
.150	1 01 23	-30 18.8	14.10	1.10	5	4			
30.1.151	1 01 43	-30 13.6	13.87	0.89	8	8			
.152	1 01 51	-30 18.1	13.80	0.66	8	7			
.153	1 01 53	-30 17.3	9.83	0.26	12	7	HD 6365	118	
.154	1 02 07	-30 11.6	14.03	0.65	7	8			
.155	1 02 07	-30 14.3	14.21	1.56	7	5			
.156	1 02 08	-30 13.3	15.17	1.12	3	4			
.157	1 02 12	-30 12.8	13.36	0.81	11	9			
.158	1 02 28	-30 13.6	14.48	1.48	7	8			
.159	1 02 28	-30 18.8	14.02	1.26	8	5			
.160	1 02 39	-30 12.1	16.05	0.88	2	2			

NO	R.A.	DEC.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
30.1.161	1 02 55	-30 12.6	14.40	1.48	5	5			
.162	1 03 12	-30 17.6	12.53	0.76	10	11	-30 335		
.163	1 03 17	-30 16.3	16.10	0.47	2	3			
.164	1 03 57	-30 12.0	14.85	0.75	5	6			
.165	1 04 10	-30 14.1	16.17	1.18	1	2			
.166	1 04 14	-30 10.6	13.62	0.92	7	8			
.167	1 04 16	-30 16.8	15.40	1.41	1	2			*
.168	1 04 18	-30 10.1	15.54	0.67	2	4			
.169	1 04 18	-30 11.6	15.40	1.61	2	2			*
.170	1 04 25	-30 16.8	15.60	1.26	2	2			
30.1.171	1 04 30	-30 14.1	11.92	0.98	13	10	-30 346	362	
.172	1 04 31	-30 16.1	14.44	0.79	5	5			
.173	1 04 35	-30 17.8	14.96	0.88	5	4			
.174	1 04 38	-30 16.1	14.76	1.15	5	5			
.175	1 04 45	-30 19.3	16.29	0.79	2	2			
.176	1 04 46	-30 17.3	15.89	0.82	2	2			
.177	1 04 52	-30 11.6	12.46	0.68	11	9	-30 350		
.178	1 04 54	-30 17.8	15.59	0.68	2	3			
.179	1 05 00	-30 13.0	15.50	0.81	2	4			
.180	1 05 00	-30 14.0	14.18	0.89	5	6			
30.1.181	1 05 02	-30 10.8	15.15	1.01	2	4			
.182	1 05 10	-30 19.0	14.88	0.68	5	4			
.183	1 05 13	-30 17.1	14.70	0.91	5	5			
.184	1 05 14	-30 19.8	15.10	1.15	2	3			
.185	1 05 17	-30 11.3	13.75	0.56	6	7			
.186	1 05 24	-30 17.3	16.01	1.56	2	2			
.187	1 05 37	-30 16.3	14.35	1.19	5	5			
.188	1 05 38	-30 16.8	15.13	0.72	2	5			
.189	1 05 40	-30 13.1	15.93	0.67	2	2			
.190	1 05 45	-30 15.1	15.01	0.77	3	5			
30.1.191	1 05 59	-30 19.0	14.73	0.71	5	5			
.192	1 06 02	-30 12.3	13.60	0.69	7	7			
.193	1 06 02	-30 12.6	12.75	0.74	9	9	-30 356		
.194	1 06 05	-30 17.6	15.98	0.98	2	2			
.195	1 06 06	-30 12.1	14.87	0.95	5	5			
.196	1 06 08	-30 17.1	10.90	0.54	11	8	-30 357	400	
.197	1 06 31	-30 17.3	16.27	1.23	2	1			
.198	1 06 32	-30 12.8	14.36	1.42	5	5			
.199	1 06 34	-30 12.6	14.00	1.24	6	5			
.200	1 06 36	-30 17.0	14.50	0.66	4	5			
30.1.201	1 06 38	-30 14.0	13.22	0.69	7	8			
.202	1 06 41	-30 19.1	16.16	1.38	1	1			
.203	1 06 53	-30 18.8	12.34	1.02	6	9	-30 363	418	
.204	1 07 02	-30 11.6	15.93	1.43	1	2			
.205	1 07 02	-30 13.5	15.75	0.78	1	2			
.206	1 07 07	-30 14.6	15.87	1.17	1	2			
.207	1 07 08	-30 14.8	15.21	0.66	1	5			
.208	1 07 14	-30 17.6	14.14	0.62	3	6			
.209	1 07 21	-30 14.6	13.08	0.78	5	8			
.210	1 07 26	-30 11.5	16.04	0.72	1	2			
30.1.211	1 07 30	-30 14.3	14.62	0.91	3	5			
.212	1 07 36	-30 17.5	15.05	0.51	2	5			
.213	1 07 39	-30 17.8	14.30	1.03	3	5			
.214	1 08 13	-30 11.1	14.45	0.46	2	5			
.215	1 08 21	-30 12.3	11.86	0.69	6	6	-30 370		
.216	1 08 26	-30 17.6	14.87	0.79	2	2			
.217	1 08 34	-30 19.6	11.93	0.62	5	4	-30 371		
.218	1 08 45	-30 18.5	13.71	0.52	3	3			
.219	1 08 55	-30 11.0	14.90	1.45	2	2			
.220	1 08 55	-30 15.1	16.27	0.65	1	1			
30.1.221	1 08 59	-30 18.8	14.38	1.02	2	1			
.222	1 09 09	-30 12.0	13.71	0.62	3	3			
.223	1 09 14	-30 19.8	14.56	1.22	2	1			
.224	1 09 23	-30 12.0	9.29	1.19	4	2	HD 7185	451	
.225	1 09 24	-30 11.1	14.63	1.00	2	2			
.226	1 09 39	-30 14.8	15.15	0.76	1	1			
.227	1 09 43	-30 11.6	15.89	0.60	1	1			
.228	1 09 57	-30 15.8	14.21	0.98	2	1			
.229	1 10 04	-30 17.6	16.13	1.21	1	1			
.230	1 10 05	-30 18.1	13.92	0.78	3	2			
30.1.231	1 10 06	-30 11.8	13.25	0.67	4	2			
.232	1 10 31	-30 11.8	15.58	0.56	1	1			
.233	1 10 31	-30 15.8	14.38	0.93	2	1			
.234	1 10 39	-30 13.5	11.98	0.61	5	3	-30 379	469	
.235	1 10 40	-30 19.8	15.41	1.29	1	1			
.236	1 10 49	-30 10.0	14.79	0.79	2	1			
.237	1 10 54	-30 13.3	14.15	0.91	2	2			
.238	1 11 02	-30 16.8	15.02	1.27	2	1			
.239	1 11 04	-30 16.6	13.17	0.67	4	2			
30.2.001	0 43 33	-30 29.8	14.87	0.62	2	2			
.002	0 43 36	-30 23.3	15.22	0.71	1	2			
.003	0 43 39	-30 27.8	15.58	0.60	1	2			
.004	0 43 44	-30 23.8	15.75	0.93	1	1			
.005	0 44 00	-30 20.0	12.11	0.66	5	7	-30 225	9	
.006	0 44 11	-30 27.8	6.80	1.23			HD 4471	16	*
.007	0 44 21	-30 20.5	13.51	0.53	3	5			
.008	0 44 24	-30 25.8	13.16	0.93	4	5			
.009	0 44 25	-30 22.6	13.23	0.80	4	5			
.010	0 44 25	-30 27.5	15.57	1.49	1	1			
30.2.011	0 44 32	-30 27.3	10.33	0.30	6	6	-30 230	21	*
.012	0 44 33	-30 27.5	11.59	1.20	6	7			
.013	0 44 38	-30 26.3	15.11	0.80	1	3			
.014	0 44 52	-30 26.5	15.70	1.24	1	1			
.015	0 45 08	-30 24.0	11.65	0.71	6	7	-30 234		
.016	0 45 09	-30 26.0	12.12	0.62	5	7	-30 235		
.017	0 45 11	-30 27.6	13.22	0.78	4	5			
.018	0 45 24	-30 20.6	13.11	0.46	4	6			
.019	0 45 35	-30 21.6	11.33	0.56	6	7	-30 241		
.020	0 45 42	-30 25.1	13.90	0.72	3	4			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
30.2.021	0 46 06	-30 21.8	15.71	0.52	1	3			
.022	0 46 11	-30 27.1	15.31	0.81	1	2			
.023	0 46 28	-30 20.3	15.76	0.64	1	2			
.024	0 46 30	-30 20.6	11.58	1.00	6	7	-30 247		
.025	0 46 39	-30 28.0	14.88	0.94	3	5			
.026	0 46 53	-30 23.3	13.41	0.70	6	5			
.027	0 46 55	-30 23.3	15.31	0.94	1	2			
.028	0 46 59	-30 21.3	15.79	1.14	1	1			
.029	0 47 16	-30 25.1	15.59	0.80	1	2			
.030	0 47 17	-30 27.1	15.54	1.59	1	1			
30.2.031	0 47 24	-30 27.5	15.62	0.93	1	2			
.032	0 47 31	-30 23.1	14.43	1.62	3	2			
.033	0 47 41	-30 29.6	15.06	0.67	1	3			
.034	0 47 47	-30 29.8	13.54	0.71	5	5			
.035	0 47 58	-30 28.3	13.08	1.18	6	5			
.036	0 48 10	-30 25.3	13.40	0.71	6	5			
.037	0 48 21	-30 20.1	14.32	0.45	4	10			
.038	0 48 26	-30 25.8	14.70	0.82	4	8			
.039	0 48 28	-30 27.3	15.03	0.47	2	8			
.040	0 48 49	-30 23.8	13.32	0.73	9	14			
30.2.041	0 48 50	-30 25.3	14.68	0.58	4	9			
.042	0 48 57	-30 20.8	15.78	0.74	1	4			
.043	0 49 19	-30 22.8	15.40	1.01	1	5			
.044	0 49 32	-30 28.5	12.92	0.66	9	15			
.045	0 49 40	-30 20.8	12.56	0.52	10	16	-30 261		
.046	0 49 57	-30 23.6	15.45	0.63	1	7			
.047	0 50 00	-30 22.6	14.66	0.91	4	8			
.048	0 50 20	-30 25.1	13.91	0.49	6	12			
.049	0 50 32	-30 28.0	14.51	0.57	4	10			
.050	0 51 18	-30 20.8	13.73	0.58	13	15	-30 268		
30.2.051	0 51 24	-30 26.8	8.99	0.43			HD 5228	142	*
.052	0 51 27	-30 22.1	14.44	0.66	4	9			
.053	0 51 36	-30 25.1	14.37	0.60	4	10			
.054	0 51 37	-30 20.6	15.25	0.59	1	7			
.055	0 51 52	-30 22.8	12.34	0.53	11	17			
.056	0 52 08	-30 23.8	15.50	0.54	1	6			
.057	0 52 16	-30 22.6	11.80	0.99	14	18	-30 275		
.058	0 52 23	-30 28.0	15.18	0.79	1	6			
.059	0 52 46	-30 28.8	14.89	1.21	5	6			
.060	0 52 49	-30 22.3	11.47	0.66	13	13	-30 276		
30.2.061	0 52 58	-30 23.3	15.19	1.06	2	5			
.062	0 53 11	-30 25.3	15.63	0.53	2	5			
.063	0 53 13	-30 20.3	15.39	0.41	2	7			
.064	0 53 15	-30 25.6	13.73	0.87	6	10			
.065	0 53 49	-30 28.1	15.69	0.57	2	4			
.066	0 54 06	-30 29.6	14.16	0.89	5	6			
.067	0 54 09	-30 21.8	14.39	1.03	5	6			
.068	0 54 22	-30 27.8	15.06	0.67	3	5			
.069	0 54 22	-30 28.8	11.25	1.20	11	12	-30 282		
.070	0 54 25	-30 20.8	14.80	0.86	4	6			
30.2.071	0 54 26	-30 20.3	14.64	0.57	4	9			
.072	0 54 33	-30 28.1	14.00	0.97	6	7			
.073	0 54 36	-30 29.8	11.30	0.57	11	10	-30 284		
.074	0 54 37	-30 25.6	14.72	0.82	5	7			
.075	0 54 42	-30 22.6	15.19	0.79	2	6			
.076	0 54 45	-30 24.1	14.51	0.89	5	7			
.077	0 55 05	-30 22.8	15.45	0.56	2	5			
.078	0 55 06	-30 27.6	15.19	0.95	2	4			
.079	0 55 08	-30 27.3	15.32	1.08	2	3			
.080	0 55 11	-30 24.3	14.46	0.77	5	6			
30.2.081	0 55 26	-30 23.6	13.76	1.42	6	7			
.082	0 55 28	-30 24.6	15.43	1.32	2	3			
.083	0 55 37	-30 22.5	14.98	0.72	3	5			
.084	0 55 37	-30 27.8	15.40	0.52	2	5			
.085	0 55 59	-30 26.8	14.97	0.80	3	6			
.086	0 56 01	-30 20.0	12.10	1.29	12	13	-30 296		
.087	0 56 07	-30 25.1	15.17	0.71	2	5			
.088	0 56 08	-30 29.6	12.60	0.87	10	12			
.089	0 56 20	-30 22.1	10.78	0.66	9	14	-30 298	220	
.090	0 56 28	-30 25.3	13.49	0.61	8	12			
30.2.091	0 56 36	-30 21.6	13.79	0.72	8	10			
.092	0 56 37	-30 23.1	15.52	0.62	1	5			
.093	0 56 40	-30 28.3	13.61	0.88	8	10			
.094	0 57 02	-30 26.6	15.09	0.76	2	6			
.095	0 57 09	-30 23.1	14.86	1.29	4	5			
.096	0 57 10	-30 21.8	14.66	0.81	4	6			
.097	0 57 28	-30 28.8	14.40	0.77	4	5			
.098	0 57 40	-30 29.8	15.53	0.65	2	2			
.099	0 58 03	-30 23.0	16.19	0.51	2	1			
.100	0 58 07	-30 28.6	14.95	0.59	3	3			
30.2.101	0 58 09	-30 26.5	16.09	0.98	2	1			
.102	0 58 15	-30 26.1	15.07	0.84	3	3			
.103	0 58 23	-30 29.6	15.00	0.93	4	3			
.104	0 58 26	-30 22.3	15.31	0.73	2	3			
.105	0 58 28	-30 22.8	14.56	0.66	6	7			
.106	0 58 36	-30 23.6	15.27	1.32	2	2			
.107	0 58 47	-30 21.3	11.66	0.72	13	9	-30 307		
.108	0 58 57	-30 22.1	12.61	0.62	10	9	-30 309		
.109	0 59 07	-30 25.5	15.92	0.74	2	2			
.110	0 59 10	-30 25.8	11.67	0.82	13	9	-30 310		
30.2.111	0 59 19	-30 29.3	15.90	1.47	2	1			
.112	0 59 22	-30 20.5	15.91	1.26	2	2			
.113	0 59 32	-30 29.3	15.50	0.82	2	2			
.114	0 59 39	-30 23.1	14.06	0.89	6	5			
.115	0 59 40	-30 23.5	11.73	1.13	14	10	-30 317	278	
.116	0 59 42	-30 25.1	15.12	1.27	2	3			
.117	0 59 45	-30 28.8	15.22	1.50	2	2			
.118	0 59 46	-30 26.6	15.13	0.68	3	4			
.119	0 59 46	-30 28.6	14.79	1.04	5	4			
.120	0 59 49	-30 25.3	15.38	1.44	2	2			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
30.2.121	0 59 55	-30 26.3	15.94	0.47	2	3			
.122	1 00 26	-30 20.0	13.46	0.63	10	8			
.123	1 00 27	-30 23.6	15.48	0.95	2	3			
.124	1 00 34	-30 20.0	15.09	0.73	2	4			
.125	1 00 34	-30 22.3	13.28	0.70	10	8			
.126	1 00 39	-30 22.6	16.03	0.47	2	2			
.127	1 00 50	-30 20.8	15.47	0.72	2	3			
.128	1 00 55	-30 21.1	15.66	0.71	2	3			
.129	1 00 59	-30 22.3	12.26	0.63	12	11	-30 326		
.130	1 01 02	-30 25.8	15.91	0.64	2	3			
30.2.131	1 01 06	-30 26.1	15.41	0.66	2	4			
.132	1 01 11	-30 28.0	15.12	1.37	3	3			
.133	1 01 16	-30 26.3	16.17	0.77	2	2			
.134	1 01 20	-30 20.6	12.32	0.69	12	10	-30 327		
.135	1 01 22	-30 20.5	15.22	0.43	2	4			
.136	1 01 40	-30 24.0	13.62	0.70	8	7			
.137	1 01 46	-30 22.8	14.45	0.99	6	5			
.138	1 01 46	-30 25.8	15.62	0.69	2	3			
.139	1 01 46	-30 27.6	15.82	1.39	2	2			
.140	1 01 49	-30 21.5	14.91	0.68	6	4			
30.2.141	1 02 00	-30 22.1	15.70	0.66	3	4			
.142	1 02 00	-30 23.1	16.03	0.62	3	3			
.143	1 02 00	-30 24.3	14.56	0.61	7	5			
.144	1 02 05	-30 22.5	16.24	1.07	3	2			
.145	1 02 22	-30 23.8	14.23	1.53	7	5			
.146	1 02 44	-30 28.1	15.42	0.90	2	4			
.147	1 03 16	-30 24.5	15.59	0.66	2	4			
.148	1 03 42	-30 26.3	16.08	1.03	2	2			
.149	1 03 52	-30 28.8	14.57	0.88	5	6			
.150	1 03 55	-30 23.6	11.46	0.62	11	8	-30 342		
30.2.151	1 04 02	-30 25.1	15.99	1.41	1	2			
.152	1 04 09	-30 21.3	13.66	0.71	7	9			
.153	1 04 23	-30 20.8	15.53	0.80	2	3			
.154	1 04 23	-30 25.3	10.42	0.69	11	10	-30 345	358	
.155	1 04 25	-30 22.3	15.15	0.89	2	4			
.156	1 04 31	-30 29.3	12.64	0.99	9	8		363	
.157	1 04 36	-30 25.6	14.57	0.78	4	5			
.158	1 04 41	-30 28.1	16.08	1.01	2	2			
.159	1 04 44	-30 20.3	15.65	1.71	2	2			
.160	1 04 45	-30 28.1	15.33	0.45	2	4			
30.2.161	1 04 46	-30 25.8	16.24	1.42	2	1			
.162	1 04 47	-30 29.6	14.41	0.81	5	5			
.163	1 04 52	-30 23.8	15.69	1.03	2	2			
.164	1 05 13	-30 20.1	14.86	1.05	5	4			
.165	1 05 16	-30 25.6	13.04	0.78	9	7			
.166	1 05 16	-30 28.6	11.77	0.67	13	10	-30 354		
.167	1 05 22	-30 20.6	16.13	0.74	2	2			
.168	1 05 27	-30 24.1	14.69	0.82	4	5			
.169	1 05 28	-30 28.6	14.08	0.66	4	4			
.170	1 05 29	-30 23.1	16.21	0.82	2	2			
30.2.171	1 05 58	-30 21.5	15.43	0.58	2	4			
.172	1 06 09	-30 23.0	15.09	1.03	3	2			
.173	1 06 24	-30 27.6	11.83	1.07	8	9	-30 359	409	
.174	1 06 32	-30 21.2	16.18	0.71	1	2			
.175	1 06 32	-30 28.8	15.65	0.80	3	3			
.176	1 06 39	-30 21.0	11.86	0.69	7	9	-30 362		
.177	1 06 39	-30 23.1	13.44	0.83	4	7			
.178	1 06 42	-30 29.6	12.18	0.76	6	7			
.179	1 06 51	-30 25.1	13.05	0.71	5	7			
.180	1 06 51	-30 29.6	15.27	0.78	1	3			
30.2.181	1 07 08	-30 20.8	14.41	0.93	3	5			
.182	1 07 08	-30 27.0	12.23	0.52	6	7	-30 365		
.183	1 07 09	-30 21.1	12.07	0.80	8	9	-30 366		*
.184	1 07 11	-30 25.3	14.73	0.57	3	4			
.185	1 07 23	-30 29.1	14.44	0.75	2	4			
.186	1 07 25	-30 23.3	14.20	0.56	3	6			
.187	1 07 35	-30 24.3	13.61	1.29	3	6			
.188	1 07 52	-30 29.0	14.33	0.96	2	4			
.189	1 07 54	-30 21.1	16.25	1.33	2	2			*
.190	1 07 56	-30 20.0	15.30	1.08	1	3			
30.2.191	1 08 01	-30 28.3	15.71	0.87	1	1			
.192	1 08 03	-30 29.8	15.75	1.43	1	1			
.193	1 08 10	-30 24.8	14.79	0.72	2	3			
.194	1 08 14	-30 21.8	10.87	0.57	5	3	-30 369	431	
.195	1 08 17	-30 22.1	15.91	0.68	1	2			
.196	1 08 20	-30 22.5	15.18	0.96	1	2			
.197	1 08 22	-30 28.8	15.61	1.43	1	1			
.198	1 08 33	-30 27.3	15.76	0.79	1	1			
.199	1 08 38	-30 22.1	15.06	0.92	1	2			
.200	1 08 57	-30 22.1	15.07	1.12	2	1			
30.2.201	1 08 57	-30 23.1	16.20	1.20	1	1			
.202	1 09 00	-30 28.5	12.82	0.51	4	3			
.203	1 09 08	-30 28.6	13.96	0.55	3	2			
.204	1 09 14	-30 22.3	VAR.				-30 375		*
.205	1 09 20	-30 25.3	15.62	0.56	1	1			
.206	1 09 25	-30 25.1	14.72	0.95	2	1			
.207	1 09 30	-30 23.8	14.96	0.75	2	1			
.208	1 10 11	-30 24.5	15.82	0.65	1	1			
.209	1 10 43	-30 24.6	16.21	0.86	1	1			
.210	1 10 45	-30 22.8	14.91	1.00	2	1			
30.2.211	1 11 01	-30 21.6	15.87	0.99	1	1			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
30.3.001	0 43 33	-30 33.3	13.5:	1.9:					*
.002	0 43 33	-30 33.3	13.7:	1.6:					*
.003	0 43 37	-30 38.6	14.19	0.74	2	3			
.004	0 44 03	-30 39.6	14.42	1.47	1	2			
.005	0 44 22	-30 30.3	14.57	1.34	2	2			
.006	0 44 32	-30 32.8	13.12	0.88	4	5			
.007	0 44 36	-30 33.6	15.49	0.48	2	2			
.008	0 44 36	-30 37.9	10.21	1.09	6	6	-31 288	23	
.009	0 44 47	-30 36.1	15.53	0.74	1	2			
.010	0 44 48	-30 41.8	15.37	0.81	1	2			
30.3.011	0 44 50	-30 32.1	12.03	0.74	6	7	-30 231		
.012	0 44 58	-30 38.0	15.20	0.95	1	2			
.013	0 45 01	-30 34.8	15.57	1.02	1	1			
.014	0 45 24	-30 35.8	15.39	0.74	1	2			
.015	0 45 29	-30 38.8	15.37	0.97	0	2			
.016	0 45 42	-30 35.2	13.73	0.88	4	4			
.017	0 45 42	-30 38.0	14.62	0.99	3	3			
.018	0 45 43	-30 36.3	15.07	0.87	1	2			
.019	0 45 52	-30 34.1	14.57	0.98	3	4			
.020	0 45 53	-30 30.1	14.56	1.05	2	3			
30.3.021	0 46 03	-30 32.5	12.62	1.25	5	6			
.022	0 46 10	-30 36.1	15.44	0.86	1	2			
.023	0 46 23	-30 32.6	15.49	0.88	1	2			
.024	0 46 29	-30 35.6	14.14	0.87	3	3		69	
.025	0 46 44	-30 36.8	15.15	0.92	1	2			
.026	0 46 50	-30 31.6	10.98	0.63	7	7	-30 250	70	
.027	0 47 01	-30 35.6	14.32	0.75	3	3			
.028	0 47 16	-30 32.1	14.79	0.96	3	3			
.029	0 47 29	-30 30.3	11.81	0.72	9	7			
.030	0 47 31	-30 34.8	13.61	1.17	5	4			
30.3.031	0 47 32	-30 31.1	15.61	0.95	1	1			
.032	0 47 52	-30 32.6	13.46	0.61	6	5			
.033	0 48 09	-30 31.5	12.13	0.83	8	7	-30 254		
.034	0 48 24	-30 34.3	12.48	0.57	10	15			
.035	0 48 26	-30 34.8	14.04	0.94	5	8			
.036	0 48 27	-30 36.3	15.03	0.69	3	8			
.037	0 48 34	-30 38.3	10.29	0.62	12	12	-31 309	100	
.038	0 48 50	-30 38.0	12.44	0.82	13	17			
.039	0 48 57	-30 34.1	14.74	0.58	5	8			
.040	0 48 59	-30 32.3	14.78	0.58	5	8			
30.3.041	0 48 59	-30 36.8	15.66	1.22	1	2			
.042	0 49 01	-30 36.5	12.31	0.63	13	18			
.043	0 49 06	-30 32.6	15.00	0.67	3	7			*
.044	0 49 05	-30 37.1	14.09	1.16	5	8			
.045	0 49 09	-30 36.8	15.56	1.01	1	3			
.046	0 49 10	-30 34.5	15.61	0.66	1	5			
.047	0 49 12	-30 37.0	14.13	0.75	5	10			
.048	0 49 12	-30 38.2	14.37	0.75	5	8			
.049	0 49 13	-30 30.5	14.80	0.75	5	7			
.050	0 49 14	-30 35.0	15.15	0.60	2	7			
30.3.051	0 49 24	-30 32.8	15.92	0.98	3	7			
.052	0 49 25	-30 36.8	15.43	0.56	1	6			
.053	0 49 42	-30 32.6	15.03	1.15	3	6			
.054	0 49 42	-30 33.3	14.1:	0.4:					*
.055	0 49 42	-30 33.3	15.2:	0.7:					*
.056	0 49 44	-30 30.5	15.78	0.76	1	4			
.057	0 49 47	-30 36.3	12.63	0.92	11	16			
.058	0 50 02	-30 35.8	12.08	0.36	13	17		118	
.059	0 50 07	-30 35.1	15.25	1.23	2	4			
.060	0 50 17	-30 34.1	14.16	0.91	5	9			
30.3.061	0 50 30	-30 37.3	14.72	0.89	4	8			*
.062	0 50 34	-30 37.6	7.17	0.92			HD 5133	130	*
.063	0 50 52	-30 38.3	15.50	0.39	1	7			
.064	0 51 05	-30 32.0	15.66	0.64	1	7			
.065	0 51 13	-30 34.6	15.63	0.52	1	6			
.066	0 51 23	-30 33.8	15.67	0.80	1	4			
.067	0 51 36	-30 30.5	14.55	0.56	5	9			
.068	0 51 41	-30 34.3	14.02	0.56	5	12		151	
.069	0 51 44	-30 36.3	15.53	0.68	1	5			
.070	0 51 54	-30 30.5	13.49	0.96	9	13			
30.3.071	0 51 56	-30 37.8	15.70	1.01	1	2			
.072	0 51 59	-30 33.2	15.14	0.80	1	6			
.073	0 51 59	-30 37.1	14.43	0.78	5	8			
.074	0 52 00	-30 33.1	15.35	0.54	4	10			
.075	0 52 04	-30 30.5	15.02	0.54	3	8			
.076	0 52 13	-30 30.1	14.48	1.15	5	8			
.077	0 52 15	-30 31.[illegible]	14.54	0.98	5	8			
.078	0 52 22	-30 33.1	12.62	0.80	10	15			
.079	0 52 24	-30 33.0	15.71	1.08					*
.080	0 52 27	-30 32.3	11.[illegible]	0.49	7	15			
30.3.081	0 52 39	-30 32.1	14.93	0.58	3	7			
.082	0 52 41	-30 34.3	13.27	0.63	10	15			
.083	0 52 48	-30 36.6	14.65	0.77	4	5			
.084	0 52 48	-30 37.8	13.93	0.48	2	5			
.085	0 52 50	-30 38.5	13.06	0.52	6	8			
.086	0 53 05	-30 35.4	15.38	0.86	2	4			
.087	0 53 08	-30 35.3	15.69	0.91	2	8			
.088	0 53 10	-30 36.1	12.99	0.89	9	10			
.089	0 53 17	-30 34.0	15.51	0.97	2	5			
.090	0 53 22	-30 38.8	15.49	0.85	2	3			
30.3.091	0 53 56	-30 35.8	11.85	1.03	13	10	-31 361		
.092	0 54 07	-30 39.1	13.79	0.59	6	8			
.093	0 54 08	-30 37.6	14.03	0.91	6	6			
.094	0 54 13	-30 39.1	14.78	0.68	5	5			
.095	0 54 39	-30 36.9	14.57	0.80	6	5			
.096	0 54 47	-30 36.8	13.50	0.71	8	9			
.097	0 54 51	-30 39.9	14.07	1.06	6	5			
.098	0 55 09	-30 39.6	13.18	0.69	9	9			
.099	0 55 23	-30 31.8	14.41	1.05	9	9			
.100	0 55 31	-30 35.5	12.54	0.66	9	11	-30 292		

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
30.3.101	0 55 32	-30 38.1	11.68	0.59	12	11	-31 377	207	
.102	0 55 38	-30 33.3	14.76	0.58	5	6			
.103	0 56 12	-30 30.6	15.08	1.56	4	3			
.104	0 56 19	-30 39.0	15.48	0.61	2	4			
.105	0 56 25	-30 37.8	13.11	0.75	11	10			
.106	0 56 36	-30 38.8	14.20	0.60	6	7			
.107	0 56 43	-30 34.3	15.01	0.85	4	6			
.108	0 56 55	-30 32.8	14.06	1.14	7	6			
.109	0 56 57	-30 35.3	15.36	0.62	2	5			
.110	0 57 29	-30 37.8	9.82	0.50	7	6	HD 5875	243	
30.3.111	0 57 39	-30 30.1	14.68	0.87	4	3			
.112	0 58 02	-30 38.0	12.66	0.59	7	6			
.113	0 58 04	-30 39.8	14.24	1.38	3	3			
.114	0 58 05	-30 39.6	15.80	1.27	1	1			
.115	0 58 08	-30 38.0	15.12	0.62	2	3			
.116	0 58 09	-30 33.1	15.11	0.63	2	3			
.117	0 58 16	-30 31.1	15.92	0.54	2	2			
.118	0 58 31	-30 30.3	15.65	0.55	2	2			
.119	0 58 35	-30 33.6	13.55	0.70	6	5			
.120	0 58 39	-30 38.8	14.74	0.79	3	3			
30.3.121	0 58 49	-30 33.8	16.06	0.56	2	1			
.122	0 59 04	-30 34.5	13.61	0.73	5	6			
.123	0 59 18	-30 33.3	16.23	1.04	2	1			
.124	0 59 41	-30 30.3	16.07	0.51	2	2			
.125	0 59 51	-30 35.1	11.09	0.47	10	9	-30 318	281	
.126	0 59 53	-30 34.6	15.14	0.72	2	4			
.127	1 00 00	-30 32.3	14.32	0.49	5	5			
.128	1 00 01	-30 39.6	9.21	1.07	7	7	HD 6166	287	
.129	1 00 04	-30 37.6	16.13	0.94	2	1			
.130	1 00 13	-30 38.6	13.61	0.75	7	7			
30.3.131	1 00 25	-30 31.3	9.73	0.53	10	8	HD 6206	294	
.132	1 00 30	-30 32.5	15.51	0.92	2	3			
.133	1 00 46	-30 30.1	14.63	0.93	5	4			
.134	1 00 48	-30 35.5	13.51	0.57	9	8			
.135	1 00 51	-30 36.1	16.01	0.91	2	2			
.136	1 00 56	-30 35.0	14.86	0.72	5	4			
.137	1 00 57	-30 37.8	12.04	0.58	11	12	-31 417	305	
.138	1 00 59	-30 34.5	15.56	0.65	2	3			
.139	1 01 05	-30 30.1	14.87	1.14	5	4			
.140	1 01 05	-30 39.6	15.84	1.20	2	2			
30.3.141	1 01 25	-30 31.6	16.06	0.74	2	2			
.142	1 01 27	-30 32.1	15.22	1.03	2	3			
.143	1 01 35	-30 35.6	14.01	0.92	5	5			
.144	1 01 35	-30 36.0	12.49	0.63	10	8			
.145	1 01 36	-30 34.6	14.74	1.04	5	4			
.146	1 01 44	-30 34.1	13.4:	0.9:					*
.147	1 01 44	-30 34.1	13.5:	1.0:					*
.148	1 01 46	-30 33.6	15.81	0.65	2	2			
.149	1 01 49	-30 32.0	14.15	0.72	5	5			
.150	1 01 52	-30 31.3	14.12	1.04	2	1			
30.3.151	1 01 53	-30 36.0	14.04	0.72	6	5			
.152	1 01 57	-30 39.8	16.04	0.65	2	1			
.153	1 02 03	-30 36.0	14.35	0.62	5	6			
.154	1 02 10	-30 33.6	11.84	0.90	13	11	-30 333		
.155	1 02 11	-30 33.3	15.98	0.72	2	2			
.156	1 02 20	-30 34.0	15.81	1.50	2	2			
.157	1 02 32	-30 36.5	13.72	0.97	7	5			
.158	1 02 39	-30 34.1	13.07	0.79	9	7			
.159	1 02 43	-30 33.8	12.90	0.66	9	8			
.160	1 02 49	-30 30.6	15.86	1.27	2	2			
30.3.161	1 02 49	-30 31.8	15.51	0.83	2	3			
.162	1 02 49	-30 36.1	15.50	0.79	2	3			
.163	1 02 53	-30 31.6	16.19	0.61	2	2			
.164	1 03 01	-30 35.6	15.57	0.66	2	3			
.165	1 03 03	-30 39.8	15.87	0.91	2	2			
.166	1 03 06	-30 35.5	14.85	1.26	5	3			
.167	1 03 13	-30 32.8	16.29	1.38	2	1			
.168	1 03 16	-30 32.6	14.10	0.97	6	5			
.169	1 03 20	-30 39.6	12.29	0.65	11	9			
.170	1 03 25	-30 32.1	15.53	0.27	2	4			
30.3.171	1 03 32	-30 32.0	15.39	1.05	2	3			
.172	1 03 38	-30 37.3	15.11	0.79	3	4			
.173	1 03 48	-30 32.8	16.24	0.97	2	2			
.174	1 03 58	-30 36.6	15.57	0.73	2	3			
.175	1 04 00	-30 31.1	15.27	0.61	2	5			
.176	1 04 13	-30 30.1	13.89	0.62	6	6			
.177	1 04 19	-30 39.8	13.86	0.62	6	6			
.178	1 04 23	-30 37.1	15.55	0.80	2	2			
.179	1 04 27	-30 34.1	13.08	0.43	9	8		361	
.180	1 04 48	-30 31.8	15.13	1.52	3	2			
30.3.181	1 04 48	-30 32.1	15.87	1.48	2	2			
.182	1 04 53	-30 34.6	12.14	0.62	11	10	-30 351		
.183	1 04 57	-30 35.3	15.18	0.89	1	4			
.184	1 04 58	-30 30.6	14.94	0.79	4	4			
.185	1 05 04	-30 32.3	15.27	0.65	2	4			
.186	1 05 09	-30 30.5	11.40	1.05	11	10	-30 353		
.187	1 05 14	-30 32.0	14.71	0.67	5	5			
.188	1 05 15	-30 33.3	16.01	0.91	1	2			
.189	1 05 34	-30 38.1	15.64	0.75	1	3			
.190	1 05 36	-30 39.3	14.17	0.79	3	5			
30.3.191	1 05 43	-30 31.6	14.26	0.62	3	6			
.192	1 05 45	-30 30.6	12.06	0.59	8	9	-30 355		
.193	1 05 51	-30 36.3	15.98	0.60	1	2			
.194	1 05 53	-30 31.6	14.94	0.76	3	3			
.195	1 05 55	-30 37.3	15.85	1.28	1	1			
.196	1 05 59	-30 39.8	11.25	0.66	7	9	-31 450		
.197	1 06 03	-30 39.3	16.30	1.21	2	1			
.198	1 06 11	-30 35.6	15.79	0.63	1	2			
.199	1 06 14	-30 35.8	16.01	0.48	1	2			
.200	1 06 19	-30 37.6	10.98	0.62	7	7	-31 453	401	

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
30.3.201	1 06 43	-30 32.0	16.28	0.84	1	1			
.202	1 06 43	-30 34.5	13.19	0.62	5	5			
.203	1 06 57	-30 35.5	12.31	0.60	5	6			
.204	1 07 01	-30 36.3	16.28	0.81	1	1			
.205	1 07 04	-30 32.1	13.84	0.84	5	5			
.206	1 07 06	-30 37.5	14.54	0.45	2	3			
.207	1 07 14	-30 39.8	15.41	1.19	1	1			
.208	1 07 29	-30 37.1	14.86	0.80	2	2			
.209	1 07 55	-30 37.1	15.15	1.20	2	2			
.210	1 08 [illegible]	-30 [illegible]	16.32	[illegible]	1	2			
30.3.211	1 06 17	-30 31.6	13.89	0.64	2	3			
.212	1 08 17	-30 28.6	15.25	0.5[illegible]	1	2			
.213	1 08 28	-30 36.8	15.06	0.69	1	1			
.214	1 08 36	-30 28.1	14.97	0.71	2	1			
.215	1 08 39	-30 37.6	14.93	0.5[illegible]	2	1			
.216	1 08 42	-30 30.8	14.[illegible]	0.[illegible]	2	1			
.217	1 08 43	-30 31.3	14.[illegible]	0.[illegible]		1			
.218	1 08 43	-30 31.6	16.[illegible]	1.[illegible]		1			
.219	1 08 49	-30 41.0	15.[illegible]	0.[illegible]	1	1			
.220	1 08 49	-30 35.8	15.97	0.56	1	1			
30.3.221	1 08 50	-30 30.1	15.44	0.56	1	1			
.222	1 08 53	-30 36.1	15.16	1.10	1	1			
.223	1 08 54	-30 36.4	15.[illegible]	0.96	1	1			
.224	1 08 54	-30 [illegible]	15.28	1.59	1	1			
.225	1 08 [illegible]	-30 [illegible]	15.90	0.75	1	1			
.226	1 09 2[illegible]	-30 [illegible]	14.86	0.67	2	1			
.227	1 09 33	-30 36.1	14.87	1.34	2	1			
.228	1 09 36	-30 31.3	15.63	0.85	1	1			
.229	1 09 41	-30 30.[illegible]	16.[illegible]	[illegible].63	1	1			
.230	1 09 43	-30 [illegible]	15.27	1.05	1	1			
30.3.231	1 09 48	-30 36.6	14.09	1.05	2	1			
.232	1 09 52	-30 37.0	12.77	0.64	4	3			
.233	1 09 58	-30 35.[illegible]	13.36	0.[illegible]	4	2			
.234	1 10 06	-30 34.6	13.93	1.25	1	1			
.235	1 10 08	-30 36.5	14.28	1.08	2	1			
.236	1 10 13	-30 30.9	16.02	1.56	1	0			
.237	1 10 16	-30 [illegible]	13.95	[illegible].67	3	2		460	
.238	1 10 23	-30 39.3	14.40	1.19	2	1			
.239	1 10 32	-30 34.6	15.68	0.74	1	1			
.240	1 10 37	-30 33.5	15.64	1.11	1	1			
30.3.241	1 10 45	-30 38.8	15.91	1.16	1	1			
.242	1 10 55	-30 32.4	15.47	1.14	1	1			
.243	1 10 57	-30 31.1	15.76	1.02	1	1			
.244	1 10 58	-30 35.6	11.40	0.57	5	3	-30 393		
.245	1 10 [illegible]	-30 35.[illegible]	15.[illegible]	1.[illegible]	1	1			
.246	1 11 01	-30 32.1	15.44	0.50	4	3			
.247	1 11 02	-30 [illegible]	16.42	1.35	2	1			
30.4.001	0 43 44	-30 [illegible]	15.[illegible]	1.1[illegible]	1	1			
.002	0 43 47	-30 44.[illegible]	15.[illegible]	1.[illegible]	1	1			
.003	0 43 50	-30 43.1	12.[illegible]	[illegible].[illegible]	4	4			
.004	0 43 59	-30 41.1	15.[illegible]	[illegible].67	0	2			
.005	0 44 01	-30 40.5	14.77	0.69	1	2			
.006	0 44 08	-30 46.6	14.86	1.31	1	2			
.007	0 44 17	-30 46.6	14.99	1.18	1	2			
.008	0 44 18	-30 44.6	15.40	1.11	0	1			
.009	0 44 26	-30 42.3	15.24	0.86	1	2			
.010	0 44 41	-30 44.3	14.72	0.66	1	2			
30.4.011	0 44 43	-30 42.0	15.[illegible]	0.85	0	1			
.012	0 44 53	-30 46.[illegible]	14.[illegible]	[illegible].[illegible]	1	3			
.013	0 44 59	-30 45.1	15.[illegible]	0.95	0	1			
.014	0 45 00	-30 46.3	14.[illegible]	1.00	1	2			
.015	0 45 01	-30 48.3	14.93	0.[illegible]	1	2			
.016	0 45 02	-30 49.8	11.[illegible]	[illegible]		4			
.017	0 45 20	-30 44.3	13.[illegible]	[illegible]		3			
.018	0 45 21	-30 47.0	14.91	1.[illegible]	1	2			
.019	0 46 05	-30 43.[illegible]	15.[illegible]	0.[illegible]	1	1			
.020	0 46 17	-30 42.6	14.[illegible]	[illegible]	2	2			
30.4.021	0 46 [illegible]	-30 [illegible]	16.[illegible]	[illegible]	2	2			
.022	0 46 27	-30 [illegible]	11.[illegible]	1.[illegible]	3	2			
.023	0 46 [illegible]	-30 [illegible]	11.[illegible]	[illegible]			-31 298		
.024	0 46 33	-30 [illegible]	12.[illegible]	[illegible]	1	2			
.025	0 46 [illegible]	-30 [illegible]	15.11	[illegible]		2			
.026	0 46 50	-30 [illegible]	13.[illegible]	[illegible]	4	5			
.027	0 47 13	-30 43.[illegible]	13.[illegible]	0.62	4	5			
.028	0 47 20	-30 [illegible]	13.[illegible]	1.52	1	1			
.029	0 47 25	-30 [illegible]	11.[illegible]	[illegible]	5	5			
.030	0 47 31	-30 49.3	[illegible]	[illegible]	6	6			
30.4.031	0 47 36	-30 40.6	15.47	[illegible]	1	2			
.032	0 47 36	-30 44.8	14.[illegible]	[illegible]	1	2			
.033	0 47 42	-30 45.0	14.[illegible]	0.8[illegible]	3	4			
.034	0 47 53	-30 46.0	[illegible].[illegible]	1.0[illegible]	2	2			
.035	0 48 06	-30 45.6	14.[illegible]	0.6	3	4			
.036	0 48 14	-30 41.[illegible]	[illegible]	[illegible]	3	4			
.037	0 48 28	-30 45.[illegible]	12.[illegible]	[illegible]	8	10	-31 308		
.038	0 48 35	-30 45.1	14.[illegible]	1.07	1	3			
.039	0 48 40	-30 48.[illegible]	13.[illegible]	0.8[illegible]	7	8			
.040	0 49 06	-30 [illegible]	15.[illegible]	1.16	1	2			
30.4.041	0 49 27	-30 43.2	15.[illegible]	[illegible]	1	3			
.042	0 49 30	-30 43.1	12.76	0.[illegible]	7	10			
.043	0 49 46	-30 44.8	14.[illegible]	0.[illegible]	5	6			
.044	0 50 02	-30 46.8	15.[illegible]	1.02	1	3			
.045	0 50 38	-30 46.5	13.[illegible]	0.[illegible]	11	9	[illegible] 326	132	
.046	0 51 15	-30 [illegible]	14.[illegible]	[illegible]	5	5			
.047	0 51 18	-30 [illegible]	12.[illegible]	[illegible]	7	9			
.048	0 51 38	-30 [illegible]	15.[illegible]	[illegible]	1	4			
.049	0 51 41	-30 42.3	14.95	1.11	1	4			
.050	0 51 48	-30 47.3	14.[illegible]	0.[illegible]	9	11	-31 339		

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
30.4.051	0 51 51	-30 49.1	12.69	0.85	7	9	-31 341		
.052	0 51 55	-30 40.6	14.66	1.00	3	4			
.053	0 52 07	-30 46.3	13.14	0.54	7	8			
.054	0 52 34	-30 45.6	15.15	1.08	1	3			
.055	0 52 47	-30 4.5	14.79	0.83	3	3			
.056	0 52 48	-30 47.1	14.46	0.78	3	4			
.057	0 52 51	-30 40.8	14.76	0.54	4	5			
.058	0 52 53	-30 47.8	10.80	0.41	9	7	-31 346	164	
.059	0 52 56	-30 44.8	14.65	0.60	3	4			
.060	0 52 57	-30 47.6	14.95	0.66	2	3			
30.4.061	0 53 03	-30 40.8	12.30	0.55	10	10	-31 349		
.062	0 53 22	-30 41.0	15.20	0.44	2	5			*
.063	0 53 23	-30 41.1	15.69	0.81	2	2			
.064	0 53 27	-30 46.8	13.89	0.51	4	7			
.065	0 53 29	-30 40.5	15.62	0.53	2	4			
.066	0 53 31	-30 45.1	13.11	0.79	5	7			
.067	0 53 41	-30 43.8	12.02	0.49	7	8	-31 357		
.068	0 53 46	-30 40.3	15.65	0.46	2	4			
.069	0 53 52	-30 46.3	13.70	0.60	4	6			
.070	0 54 28	-30 41.0	12.42	0.53	11	12	-31 367		
30.4.071	0 54 35	-30 44.6	15.33	0.95	1	3			
.072	0 54 38	-30 40.8	15.77	0.48	2	4			
.073	0 54 40	-30 41.1	13.22	0.69	10	9			
.074	0 54 43	-30 44.6	15.61	0.98	1	2			
.075	0 54 47	-30 43.6	13.71	1.47	5	4			
.076	0 54 49	-30 48.6	13.33	0.76	6	6			
.077	0 54 51	-30 48.6	15.06	1.14	2	3			
.078	0 54 56	-30 46.6	14.76	0.67	3	4			*
.079	0 55 05	-30 49.1	12.24	0.54	8	8	-31 371		
.080	0 55 07	-30 41.0	10.45	0.47	10	9	-31 373	197	
30.4.081	0 55 16	-30 45.5	8.39	1.37			HD 5631	202	*
.082	0 55 24	-30 47.8	14.89	0.70	3	3			
.083	0 55 25	-30 48.3	14.77	0.83	3	3			
.084	0 55 26	-30 47.8	15.15	0.77	1	2			
.085	0 55 45	-30 43.0	14.04	0.61	4	4			
.086	0 56 04	-30 49.8	15.65	0.51	1	2			
.087	0 56 09	-30 42.3	10.87	0.63	10	7	-31 379	217	
.088	0 56 17	-30 49.3	12.38	1.36	9	5	-31 380		
.089	0 56 24	-30 43.3	13.58	0.71	5	5			
.090	0 56 24	-30 47.0	15.32	0.63	1	2			
30.4.091	0 56 34	-30 49.8	12.63	0.65	6	6	-31 382		
.092	0 56 42	-30 49.5	13.28	0.58	6	5			
.093	0 56 50	-30 42.8	13.50	0.91	7	5			
.094	0 56 51	-30 43.3	13.66	0.92	6	4			
.095	0 56 55	-30 45.8	14.84	0.66	3	3			
.096	0 57 05	-30 43.6	14.97	0.88	3	2			
.097	0 57 33	-30 41.8	9.57	0.55	6	5	HD 5886	245	
.098	0 57 39	-30 48.1	15.39	1.01	1	1			
.099	0 57 46	-30 40.6	13.84	0.68	4	4			
.100	0 58 16	-30 44.8	13.62	0.70	5	4			
30.4.101	0 58 17	-30 40.6	11.79	0.63	8	7	-31 399		
.102	0 58 25	-30 45.3	15.12	1.76	2	1			
.103	0 58 25	-30 46.1	14.02	0.83	4	3			
.104	0 58 30	-30 40.5	15.43	0.68	1	2			
.105	0 58 30	-30 47.3	15.25	0.65	1	2			
.106	0 58 35	-30 45.6	14.15	0.88	3	2			
.107	0 58 49	-30 44.8	13.94	0.89	5	4			
.108	0 58 51	-30 41.5	15.85	0.81	1	1			
.109	0 58 54	-30 48.1	13.69	0.87	5	5			
.110	0 59 15	-30 40.1	16.10	0.75	2	1			
30.4.111	0 59 30	-30 49.0	14.58	0.89	3	3			
.112	0 59 35	-30 42.8	14.92	0.68	3	3			
.113	0 59 37	-30 47.8	16.20	1.32	1	1			
.114	0 59 43	-30 46.5	11.71	0.73	11	7	-31 407		
.115	0 59 48	-30 42.3	15.77	0.50	1	2			
.116	1 00 04	-30 40.6	15.48	0.83	2	3			
.117	1 00 16	-30 43.5	15.79	0.61	1	2			
.118	1 00 16	-30 49.1	14.40	0.94	3	3			
.119	1 00 19	-30 46.3	15.93	0.83	1	1			
.120	1 00 24	-30 49.8	13.92	1.02	4	4			
30.4.121	1 00 27	-30 41.6	14.30	0.87	5	5			
.122	1 00 38	-30 40.0	15.56	0.75	2	3			
.123	1 00 52	-30 41.0	13.44	0.76	9	8			
.124	1 00 53	-30 46.8	15.43	0.58	1	3			
.125	1 00 58	-30 45.0	14.84	1.07	4	3			
.126	1 01 00	-30 49.3	15.96	1.17	1	1			
.127	1 01 12	-30 43.1	14.88	1.21	3	3			
.128	1 01 20	-30 40.0	8.78	0.48			HD 6307	309	*
.129	1 01 26	-30 46.1	15.72	1.04	1	2			
.130	1 01 29	-30 42.6	14.37	1.63	4	4			
30.4.131	1 01 33	-30 44.5	13.72	1.02	6	5			
.132	1 01 41	-30 42.3	14.86	0.86	4	4			
.133	1 01 42	-30 45.8	14.18	0.86	4	4			
.134	1 01 44	-30 46.0	15.53	0.98	1	2			
.135	1 01 45	-30 40.3	15.73	0.81	2	2			
.136	1 01 50	-30 44.6	14.67	1.70	4	3			
.137	1 02 02	-30 40.2	11.76	0.66			-31 424	321	*
.138	1 02 02	-30 40.2	11.54	0.57			-31 424	322	*
.139	1 02 02	-30 42.3	15.19	0.70	2	4			
.140	1 02 14	-30 45.3	8.24	0.50			HD 6402	326	*
30.4.141	1 02 16	-30 47.8	14.51	1.29	4	5			
.142	1 02 19	-30 43.0	15.11	1.10	2	4			
.143	1 02 35	-30 43.1	14.75	1.02	4	5			
.144	1 02 41	-30 42.0	14.18	0.61	4	6			
.145	1 02 54	-30 43.1	15.96	0.57	2	3			
.146	1 02 59	-30 45.3	14.72	0.79	4	5			
.147	1 03 00	-30 45.8	16.21	0.88	2	2			
.148	1 03 01	-30 46.3	15.32	0.73	2	4			
.149	1 03 02	-30 47.1	16.26	0.60	1	2			
.150	1 03 03	-30 40.0	15.48	0.66	2	3			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
30.4.151	1 03 07	-30 48.8	16.11	0.80	1	2			
.152	1 03 23	-30 40.6	14.73	0.92	5	4			
.153	1 03 25	-30 40.8	16.22	1.25	2	1			
.154	1 03 25	-30 47.3	13.19	0.70	9	9			*
.155	1 03 28	-30 43.1	14.97	1.57	5	3			
.156	1 03 31	-30 45.5	14.07	0.81	6	7			
.157	1 03 37	-30 44.3	15.81	0.70	2	3			*
.158	1 03 38	-30 44.5	14.98	0.71	4	5			
.159	1 03 54	-30 44.3	15.10	0.72	3	4			
.160	1 04 05	-30 47.8	13.85	0.63	6	8			
30.4.161	1 04 07	-30 47.0	15.93	0.70	2	2			
.162	1 04 14	-30 49.3	14.19	0.92	5	5			
.163	1 04 18	-30 44.3	15.66	0.82	2	2			
.164	1 04 26	-30 47.5	15.24	0.75	1	4			
.165	1 04 39	-30 48.8	13.69	0.63	6	8			
.166	1 04 42	-30 44.0	15.28	0.62	1	4			
.167	1 04 54	-30 49.0	14.49	0.77	4	5			
.168	1 04 56	-30 47.0	16.04	0.79	1	2			
.169	1 05 05	-30 46.5	14.89	0.63	4	4			
.170	1 05 29	-30 44.8	15.36	0.83	1	3			
30.4.171	1 05 29	-30 45.6	15.41	1.04	1	3			
.172	1 05 40	-30 41.1	14.23	1.22	3	4			
.173	1 05 41	-30 40.6	15.98	1.49	1	1			
.174	1 05 52	-30 45.5	15.30	0.88	1	3			
.175	1 05 53	-30 47.8	15.87	1.49	1	1			
.176	1 06 07	-30 48.1	15.28	0.55	1	4			
.177	1 06 13	-30 49.8	15.51	1.13	1	1			
.178	1 06 16	-30 44.0	14.55	0.58	4	4			
.179	1 06 19	-30 42.3	10.21	0.55	7	8	-31 452	402	
.180	1 06 22	-30 40.6	14.54	1.03	3	3			
30.4.181	1 06 34	-30 42.8	12.50	0.67	7	4			
.182	1 06 34	-30 45.6	14.93	0.70	3	4			
.183	1 06 41	-30 41.8	15.37	0.66	1	3			
.184	1 06 43	-30 45.3	15.65	1.18	1	1			
.185	1 06 52	-30 43.3	15.49	0.93	1	2			
.186	1 06 53	-30 46.3	15.27	0.72	1	2			
.187	1 07 08	-30 47.0	16.27	0.43	1	1			
.188	1 07 10	-30 40.0	13.33	0.65	4	4			
.189	1 07 19	-30 46.0	14.93	0.64	3	3			
.190	1 07 21	-30 43.0	12.64	1.10	7	4			
30.4.191	1 07 21	-30 45.6	12.68	0.65	6	4	-31 461		
.192	1 07 26	-30 42.3	12.06	0.70	5	4	-31 462		
.193	1 07 29	-30 41.1	13.92	1.30	3	2			
.194	1 07 35	-30 49.3	11.36	0.51	8	4	-31 463		
.195	1 07 36	-30 41.6	15.23	0.95	1	2			
.196	1 07 40	-30 41.8	13.66	0.72	3	3			
.197	1 07 46	-30 42.0	14.60	0.78	2	2			
.198	1 07 57	-30 47.6	15.29	1.05	1	2			
.199	1 07 59	-30 40.3	15.81	1.46	1	1			
.200	1 08 06	-30 48.3	15.61	0.64	1	2			
30.4.201	1 08 09	-30 43.8	14.11	0.91	4	3			
.202	1 08 10	-30 41.6	16.03	1.18	1	1			*
.203	1 08 12	-30 47.0	12.45	0.70	7	4	-31 468		
.204	1 08 18	-30 41.8	13.99	0.80	3	3			
.205	1 08 19	-30 40.1	14.81	0.88	2	2			
.206	1 08 26	-30 47.8	15.04	1.37	3	2			
.207	1 08 28	-30 49.3	14.99	0.53	2	3			
.208	1 08 39	-30 41.0	15.80	1.12	1	1			
.209	1 09 00	-30 40.8	16.20	0.78	1	1			
.210	1 09 02	-30 46.8	15.30	0.61	1	2			
30.4.211	1 09 14	-30 44.6	15.82	0.65	1	1			
.212	1 09 27	-30 43.5	14.10	0.56	4	2			
.213	1 09 37	-30 48.1	13.54	0.71	4	3			
.214	1 09 39	-30 49.5	16.12	0.44	1	1			
.215	1 09 45	-30 48.3	13.00	0.54	5	3			
.216	1 09 46	-30 47.0	15.85	0.48	1	1			
.217	1 09 48	-30 48.5	15.03	1.39	2	1			
.218	1 10 08	-30 41.3	14.32	0.69	2	1			
.219	1 10 20	-30 40.3	15.96	0.68	1	1			
.220	1 10 25	-30 47.3	15.44	0.63	1	1			
30.4.221	1 10 39	-30 43.0	9.58	0.96	4	2	HD 7322	470	
.222	1 10 40	-30 43.3	15.59	0.84	1	1			
.223	1 10 51	-30 42.3	15.54	1.04	1	1			
.224	1 10 54	-30 48.6	14.50	0.73	3	2			
.225	1 11 01	-30 49.1	12.97	0.66	5	3			
.226	1 11 06	-30 41.1	11.74	0.93	6	3	-31 492		
.227	1 11 06	-30 44.5	15.30	1.52	1	1			
.228	1 11 07	-30 40.0	14.83	0.57	2	1			
30.5.001	0 43 25	-30 59.8	14.90	0.65	1	2			
.002	0 43 31	-30 59.0	7.82	0.54			HD 4390	3	*
.003	0 43 45	-30 57.6	14.03	0.93	2	2			
.004	0 43 47	-30 57.5	9.45	0.94	5	4	HD 4415	6	
.005	0 43 59	-30 52.5	15.80	0.73	0	1			
.006	0 44 03	-30 53.3	14.30	1.48	1	2			
.007	0 44 11	-30 50.1	14.22	0.64	1	3			
.008	0 44 35	-30 51.3	14.24	0.88	1	2			
.009	0 44 36	-30 50.1	15.55	0.95	0	1			
.010	0 44 44	-30 50.8	13.99	0.94	2	3			
30.5.011	0 44 45	-30 51.8	12.57	1.16	4	3	-31 289		
.012	0 44 45	-30 53.5	12.31	0.64	4	4	-31 290		
.013	0 44 51	-30 52.3	15.25	0.69	0	2			
.014	0 45 23	-30 51.3	13.58	1.22	3	3			
.015	0 45 24	-30 57.5	14.83	0.72	1	3			
.016	0 45 41	-30 52.3	11.64	0.68	5	5	-31 294		
.017	0 45 45	-30 58.0	15.78	0.72	0	1			
.018	0 45 55	-30 55.6	15.04	1.60	1	1			
.019	0 45 57	-30 53.1	13.66	0.91	3	2			
.020	0 46 09	-30 57.3	14.40	0.93	2	2			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
30.5.021	0 46 11	-30 55.6	15.09	1.70	1	1			
.022	0 46 29	-30 53.8	15.29	1.38	1	1			
.023	0 46 31	-30 55.8	13.96	0.86	2	3			
.024	0 46 36	-30 55.1	15.64	0.69	1	2			
.025	0 46 36	-30 55.3	12.40	0.53	4	6	-31 299		
.026	0 46 49	-30 54.1	10.07	0.75	6	6	-31 300	69	
.027	0 46 59	-30 54.1	15.70	1.36	1	1			
.028	0 46 59	-30 56.0	13.89	0.57	3	4			
.029	0 47 01	-30 50.6	14.66	0.58	2	2			
.030	0 47 06	-30 53.3	13.74	0.57	3	4			
30.5.031	0 47 08	-30 52.3	15.37	0.42	1	2			
.032	0 47 25	-30 50.3	13.51	0.57	4	5			
.033	0 47 26	-30 57.3	13.92	0.64	4	4			
.034	0 47 28	-30 51.1	13.88	0.99	3	4			
.035	0 47 29	-30 50.1	13.33	0.64	4	5			
.036	0 47 32	-30 55.6	15.59	0.76	1	1			
.037	0 47 33	-30 51.8	10.78	0.44	8	8	-31 303	84	
.038	0 47 47	-30 53.6	14.87	0.72	2	2			
.039	0 47 48	-30 52.3	11.63	0.45	8	8	-31 305		
.040	0 47 53	-30 50.6	14.36	0.95	2	2			
30.5.041	0 48 02	-30 57.6	15.28	0.48	1	2			
.042	0 48 47	-30 57.8	11.22	1.09	11	11	-31 312		
.043	0 48 50	-30 56.6	13.22	0.48	7	8			
.044	0 48 51	-30 57.1	13.80	0.50	5	8			
.045	0 49 01	-30 54.0	12.12	0.95	10	10	-31 314		
.046	0 49 07	-30 53.6	15.76	0.60	1	3			
.047	0 49 11	-30 50.3	12.00	0.49	10	11	-31 316		
.048	0 49 13	-30 59.1	14.47	-0.36	3	7			
.049	0 49 21	-30 51.6	13.84	0.62	5	8			
.050	0 49 23	-30 54.8	15.38	0.72	1	3			
30.5.051	0 49 25	-30 54.6	15.56	0.56	1	3			
.052	0 49 28	-30 53.3	13.75	1.00	5	6			
.053	0 49 30	-30 55.1	14.94	1.07	2	4			
.054	0 49 34	-30 51.6	10.79	0.52	11	9	-31 320	113	
.055	0 49 40	-30 53.8	15.30	0.84	1	3			
.056	0 49 46	-30 51.1	13.91	0.69	5	7			
.057	0 49 52	-30 52.6	15.32	0.91	1	3			
.058	0 49 59	-30 57.0	13.57	0.64	6	8			
.059	0 50 13	-30 53.8	14.44	1.35	3	4			
.060	0 50 29	-30 52.8	14.20	0.58	3	6			
30.5.061	0 50 30	-30 58.0	11.27	0.61	11	9	-31 324		
.062	0 50 33	-30 54.3	15.07	1.09	2	3			
.063	0 50 43	-30 58.5	13.89	0.79	5	6			
.064	0 51 05	-30 56.1	15.65	0.85	1	2			
.065	0 51 08	-30 59.0	15.44	0.58	1	3			
.066	0 51 09	-30 59.3	12.16	0.59	9	10	-31 332		
.067	0 51 11	-30 59.6	13.07	1.54	7	6			
.068	0 51 18	-30 50.3	15.01	1.12	2	3			
.069	0 51 25	-30 56.1	15.70	1.16	1	1			
.070	0 51 32	-30 59.0	14.17	0.63	3	6			
30.5.071	0 51 33	-30 58.3	14.12	0.32	3	7			
.072	0 51 49	-30 59.8	13.65	0.73	5	7			
.073	0 52 16	-30 59.3	13.13	1.10	7	7			
.074	0 52 25	-30 52.0	15.79	1.29	1	1			
.075	0 52 25	-30 55.6	15.65	0.91	1	1			
.076	0 52 45	-30 52.6	15.43	1.42	1	1			
.077	0 52 46	-30 58.1	13.18	0.70	6	6			
.078	0 52 49	-30 57.1	14.33	0.46	3	5			
.079	0 52 52	-30 56.6	15.65	1.46	1	1			
.080	0 52 58	-30 59.1	12.48	0.59	8	7	-31 348		
30.5.081	0 53 07	-30 53.1	15.54	0.91	1	2			
.082	0 53 07	-30 55.5	12.55	0.47	7	7	-31 350		
.083	0 53 08	-30 51.1	14.86	0.93	3	3			
.084	0 53 11	-30 54.3	12.52	0.99	8	7	-31 351		
.085	0 53 20	-30 56.6	15.56	1.30	1	1			
.086	0 53 44	-30 55.5	14.07	0.44	3	5			
.087	0 53 48	-30 58.1	13.75	0.77	4	6			*
.088	0 53 49	-30 58.1	14.10	0.53	3	5			*
.089	0 53 49	-30 58.6	14.50	0.62	2	4			
.090	0 53 59	-30 54.6	12.46	0.47	6	9			
30.5.091	0 54 01	-30 54.3	15.59	1.35	1	1			
.092	0 54 04	-30 54.6	11.00	0.70	8	6	-31 364	181	
.093	0 54 12	-30 51.0	14.46	0.78	2	4			
.094	0 54 20	-30 50.8	13.92	0.85	4	5			
.095	0 54 36	-30 50.6	14.87	0.64	3	4			
.096	0 55 04	-30 52.5	14.62	0.60	3	4			
.097	0 55 17	-30 57.8	15.07	0.71	1	3			
.098	0 55 20	-30 52.6	14.53	0.72	3	3			
.099	0 55 20	-30 55.5	13.88	1.16	4	3			
.100	0 55 29	-30 56.6	14.87	1.34	3	2			
30.5.101	0 55 33	-30 58.3	14.23	0.69	3	4			
.102	0 55 50	-30 56.5	14.25	0.64	3	4			
.103	0 55 51	-30 59.0	14.16	0.70	3	4			
.104	0 56 39	-30 51.1	12.34	0.73	8	6	-31 383		
.105	0 56 44	-30 51.1	13.11	0.95	6	5			
.106	0 56 48	-30 53.3	15.57	0.60	1	2			
.107	0 56 54	-30 51.8	13.34	0.60	6	5			
.108	0 57 00	-30 51.1	9.39	0.47	7	3	HD 5815	232	
.109	0 57 09	-30 57.8	15.66	0.80	1	2			
.110	0 57 11	-30 53.6	14.75	0.73	3	3			
30.5.111	0 57 13	-30 59.8	15.62	1.05	1	1			
.112	0 57 17	-30 59.8	15.72	1.02	1	1			
.113	0 57 18	-30 57.8	12.61	0.85	6	6	-31 389		
.114	0 57 21	-30 56.6	13.30	0.82	6	5			
.115	0 57 32	-30 51.8	16.09	0.50	1	1			
.116	0 57 34	-30 52.8	13.15	0.55	8	5			
.117	0 57 39	-30 59.5	12.81	0.64	6	5			
.118	0 57 44	-30 58.6	10.71	1.43	9	6	-31 394	247	
.119	0 57 48	-30 52.1	13.97	0.83	5	3			
.120	0 57 51	-30 57.0	13.13	1.24	6	4			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
30.5.121	0 58 10	-30 59.3	10.80	0.61	9	6	-31 397	254	
.122	0 58 13	-30 52.1	15.26	0.64	1	2			
.123	0 58 27	-30 52.5	13.50	0.63	6	4			
.124	0 58 39	-30 54.0	16.00	0.61	1	1			
.125	0 58 44	-30 57.3	12.28	1.00	7	5	-31 403		
.126	0 58 46	-30 50.6	14.82	0.63	3	2			
.127	0 58 47	-30 55.1	15.60	0.77	1	2			
.128	0 58 56	-30 51.5	13.49	0.40	6	5			*
.129	0 58 57	-30 52.8	10.66	0.54	9	6	-31 404	265	
.130	0 58 57	-30 58.6	15.80	0.39	1	1			
30.5.131	0 58 58	-30 57.1	12.82	0.69	5	4			
.132	0 59 01	-30 54.1	15.42	0.74	1	2			
.133	0 59 09	-30 53.1	13.40	0.66	7	5			
.134	0 59 14	-30 58.8	13.88	0.94	4	4			
.135	0 59 18	-30 51.5	15.98	0.61	1	1			
.136	0 59 20	-30 56.1	15.05	1.46	2	2			
.137	0 59 21	-30 54.3	15.29	1.73	1	1			
.138	0 59 34	-30 52.5	13.99	0.89	4	4			
.139	0 59 39	-30 56.8	15.82	0.92	1	1			
.140	0 59 49	-30 57.5	14.92	1.08	2	2			
30.5.141	0 59 57	-30 52.3	9.58	1.27	8	6	-31 410	284	
.142	1 00 01	-30 56.8	16.19	0.48	1	1			
.143	1 00 20	-30 55.8	15.24	0.56	1	3			
.144	1 00 25	-30 57.1	12.42	0.83	8	6	-31 413		
.145	1 00 36	-30 58.1	11.43	0.47	11	6	-31 415		
.146	1 00 49	-30 59.6	14.83	0.68	3	3			
.147	1 00 54	-30 58.3	15.41	1.16	1	1			
.148	1 01 04	-30 51.6	14.64	0.95	3	3			
.149	1 01 06	-30 56.5	15.88	1.20	1	1			
.150	1 01 06	-30 58.1	14.23	0.62	3	4			
30.5.151	1 01 07	-30 50.6	14.78	0.70	3	3			
.152	1 01 08	-30 55.5	14.89	1.58	3	2			
.153	1 01 12	-30 50.0	15.04	1.20	3	3			
.154	1 01 12	-30 55.8	15.31	1.31	1	1			
.155	1 01 15	-30 57.6	15.52	1.24	1	1			
.156	1 01 17	-30 51.8	15.60	0.86	1	1			
.157	1 01 17	-30 57.1	14.00	1.08	5	4			
.158	1 01 30	-30 53.5	15.54	0.82	1	2			
.159	1 01 30	-30 57.3	16.23	1.43	1	1			
.160	1 01 38	-30 58.6	15.42	0.97	1	2			
30.5.161	1 01 51	-30 53.6	14.64	0.58	3	3			
.162	1 01 51	-30 54.6	14.03	0.98	4	3			
.163	1 01 53	-30 52.8	15.41	1.25	1	1			
.164	1 02 14	-30 54.0	15.22	0.60	1	5			
.165	1 02 21	-30 59.1	10.90	0.64	9	9	-31 427	327	
.166	1 02 23	-30 53.8	15.68	0.63	1	4			
.167	1 02 27	-30 51.6	11.93	0.60	10	11	-31 429		
.168	1 02 49	-30 57.6	14.41	0.83	4	4			
.169	1 02 50	-30 53.1	12.63	0.85	7	10			
.170	1 02 52	-30 55.6	13.88	0.66	5	7			
30.5.171	1 02 57	-30 54.0	11.97	0.67	9	12	-31 432		
.172	1 03 02	-30 53.1	14.32	0.70	4	6			
.173	1 03 10	-30 54.8	13.85	0.60	5	9			
.174	1 03 10	-30 55.5	15.71	0.77	1	3			
.175	1 03 13	-30 59.1	15.15	0.65	1	4			
.176	1 03 23	-30 50.3	15.96	0.80	1	2			
.177	1 03 31	-30 56.5	12.12	1.32	9	9	-31 436		
.178	1 03 34	-30 59.6	13.82	0.90	5	5			
.179	1 03 36	-30 54.3	11.49	0.66	9	10	-31 437		
.180	1 03 38	-30 51.6	15.66	0.66	1	3			
30.5.181	1 03 39	-30 57.5	15.77	1.38	1	1			
.182	1 03 50	-30 54.1	11.07	0.61	9	9	-31 441		
.183	1 03 51	-30 53.3	15.30	1.36	2	2			
.184	1 03 58	-30 58.3	16.00	0.66	1	1			
.185	1 03 59	-30 59.3	15.29	0.59	1	4			
.186	1 04 14	-30 57.0	16.23	1.11	1	1			
.187	1 04 28	-30 53.5	14.04	1.16	5	4			
.188	1 04 34	-30 53.6	15.32	0.99	1	2			
.189	1 04 39	-30 58.3	11.99	0.70	9	10	-31 444		
.190	1 04 46	-30 58.8	12.68	0.59	6	8			
30.5.191	1 04 57	-30 53.1	14.94	0.90	3	4			
.192	1 05 09	-30 54.6	14.80	0.80	4	4			
.193	1 05 16	-30 52.5	16.09	1.17	1	1			
.194	1 05 22	-30 51.3	11.43	1.09	11	8	-31 449		
.195	1 05 22	-30 52.8	13.63	0.76	6	5		382	
.196	1 05 22	-30 59.6	16.24	0.40	1	1			
.197	1 05 28	-30 52.0	15.51	1.22	1	2			
.198	1 05 30	-30 58.3	13.06	0.67	6	7			
.199	1 05 46	-30 51.6	13.46	0.94	8	7			
.200	1 05 58	-30 51.5	16.01	-0.04	1	3			
30.5.201	1 06 22	-30 53.6	15.62	1.35	1	1			
.202	1 06 23	-30 55.1	16.12	0.69	1	1			
.203	1 06 30	-30 58.3	15.11	1.15	2	3			
.204	1 06 32	-30 56.3	14.63	1.56	4	3			
.205	1 06 37	-30 59.0	16.22	0.93	1	1			
.206	1 06 38	-30 56.8	15.73	0.53	1	2			
.207	1 06 57	-30 53.8	15.35	0.70	1	1			
.208	1 07 07	-30 56.6	12.71	0.73	6	4	-31 459		
.209	1 07 11	-30 56.8	13.04	0.66	6	4			
.210	1 07 12	-30 55.3	15.38	1.34	1	1			
30.5.211	1 07 15	-30 52.1	15.76	1.41	1	1			
.212	1 07 20	-30 59.6	16.09	0.98	1	1			
.213	1 07 26	-30 52.0	14.22	0.50	3	3			*
.214	1 07 26	-30 52.1	14.32	1.39	3	3			*
.215	1 07 35	-30 50.6	16.18	0.57	1	1			
.216	1 07 36	-30 53.0	15.44	0.61	1	2			
.217	1 07 38	-30 54.8	15.69	1.21	1	1			
.218	1 07 46	-30 56.8	16.01	0.62	1	1			
.219	1 07 56	-30 54.1	13.62	0.88	4	4			
.220	1 08 05	-30 59.5	15.94	0.28	1	2			

NO	R.A.	DECL.	V	B-V	NV	NB	HD/CD	PE	R
	(1950.0)								
30.5.221	1 08 09	-30 51.3	15.40	0.95	1	2			
.222	1 08 21	-30 56.6	15.88	1.27	1	1			
.223	1 08 32	-30 54.8	11.87	0.70	8	5	-31 472		
.224	1 08 36	-30 55.5	12.60	0.68	6	4			
.225	1 08 43	-30 55.0	15.92	0.51	1	1			
.226	1 08 55	-30 52.8	14.76	1.17	3	2			
.227	1 08 55	-30 53.3	14.43	1.57	3	2			
.228	1 08 57	-30 55.0	16.14	0.41	1	1			
.229	1 09 02	-30 53.3	13.64	0.64	4	3			
.230	1 09 02	-30 57.8	14.19	0.94	3	2			
30.5.231	1 09 05	-30 51.3	14.37	0.73	3	2			
.232	1 09 05	-30 55.8	16.13	0.44	1	1			
.233	1 09 06	-30 50.1	15.50	0.97	1	1			
.234	1 09 12	-30 50.0	9.13	1.14	4	3	HD 7165	449	
.235	1 09 36	-30 58.0	13.06	0.65	5	3			
.236	1 09 44	-30 56.0	15.67	0.59	1	1			
.237	1 09 48	-30 56.6	14.95	0.64	3	2			
.238	1 10 00	-30 58.3	16.03	0.75	1	1			
.239	1 10 11	-30 50.8	14.18	0.70	3	2			
.240	1 10 15	-30 57.5	14.33	0.72	3	2			
30.5.241	1 10 22	-30 55.6	13.59	0.80	4	3			
.242	1 10 44	-30 58.6	14.02	0.86	3	2			
.243	1 10 55	-30 59.6	13.48	1.01	4	3			
.244	1 10 59	-30 58.6	16.12	0.72	1	1			
.245	1 11 00	-30 51.8	15.96	1.05	1	1			
.246	1 11 00	-30 55.5	11.47	0.47	6	3	-31 491		

3.5.3 Remarks to the photographic catalogue.

Most asterisks in the column 7 in the Table indicate uncertain values of V and B - V, caused by adjacent stars, disturbing the measurements, and are not listed here. Very uncertain data are given with only one decimal and are marked with ":" after the value.

The relative positions of stars with the same coordinates can be seen on the charts, pp 34 - 41.

Number	Remarks
29.0.013	Double star?
0.073	Photoelectric data from Table 3
0.153	Double star
1.189	Galaxy?
2.220	Photoelectric data from Table 3
3.010	Photoelectric data from Table 3
3.096	Photoelectric data from U.S.Naval Catalogue
3.184	Double star?
3.210	Galaxy?
3.213 + 214	Double star
4.148	Photoelectric data from Table 3
5.134	Double star
5.188	Double star
29.5.213	Photoelectric data from Table 3
30.0.101 + 102	Double star?
0.157	Photoelectric data from Table 3
1.147	Double star?
1.167	Galaxy or double star?
1.169	Double star
2.006	Photoelectric data from Table 3
2.051	Photoelectric data from Table 3
2.204	Variable star, U Scl
3.062	Photoelectric data from Table 3
4.081	Photoelectric data from Table 3
4.128	Photoelectric data from Table 3
4.140	Photoelectric data from Table 3
4.202	Double star?
30.5.002	Photoelectric data from Table 3

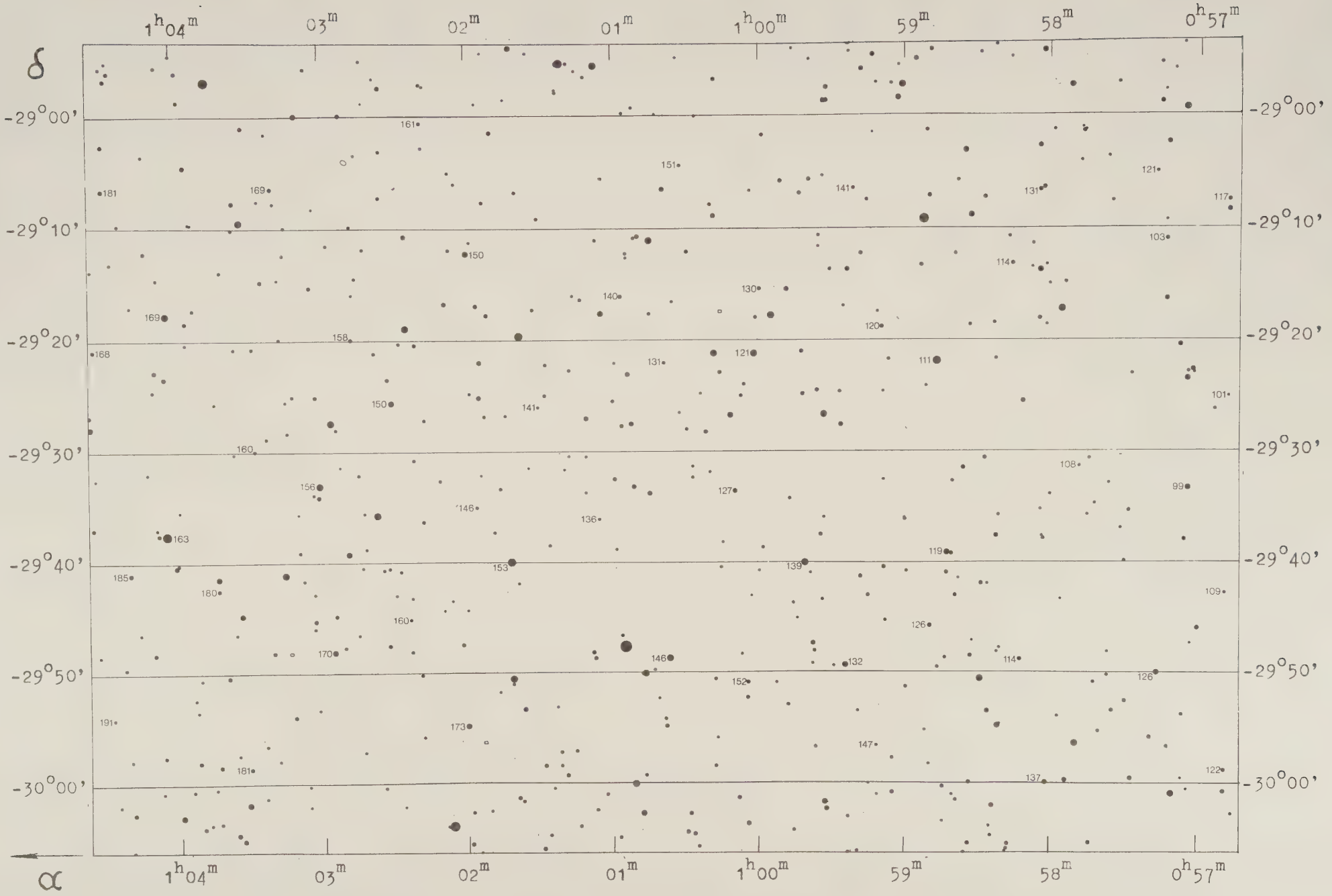
Finding charts for the stars in the photographic catalogue.

DECLINATION ZONE -29°

The stars are numbered in each 10'-zone with increasing Right Ascension.

Approximate magnitude scale:

δ
α
0h57m
56m
55m
54m
53m
52m
51m
0h50m
-29°00'
-29°10'
-29°20'
-29°30'
-29°40'
-29°50'
-30°00'
119
101
76
65
85
54
111
91
44
74
65
90
102
57
80
107
66
51
81
101
60
73
92
81
45
71
100
96
51
91
66
56
83
79
61
111
101
91
71
51
126
77
112
82
102
92
56
122
72
62


δ
α
1h04m
03m
02m
01m
1h00m
59m
58m
0h57m
-29°00'
-29°10'
-29°20'
-29°30'
-29°40'
-29°50'
-30°00'
161
151
121
181
169
141
131
117
150
103
114
140
130
169
120
158
168
131
121
111
150
141
101
160
108
156
127
99
146
136
163
119
153
139
185
180
109
160
126
170
146
132
114
152
126
191
173
147
181
137
122

δ
α
1h11m
10m
09m
08m
07m
06m
05m
1h04m
-29°00'
-29°10'
-29°20'
-29°30'
-29°40'
-29°50'
-30°00'
241
211
200
191
177
220
231
184
204
190
179
225
215
169
233
196
213
194
166
204
190
220
181
212
171
172
192
180
202
220
163
211
191
200
222
239
232
183
245
206
198
225
216
255
237
189

Finding charts for the stars in the photographic catalogue.

DECLINATION ZONE -30°

The stars are numbered in each 10'-zone with increasing Right Ascension.

Approximate magnitude scale:

0h57m
56m
55m
54m
53m
52m
51m
0h50m
δ
-30°00'
-30°10'
-30°20'
-30°30'
-30°40'
-30°50'
-31°00'
α

δ
α
1h04m
03m
02m
01m
1 00m
59m
58m
0h57m
-30°00'
-30°10'
-30°20'
-30°30'
-30°40'
-30°50'
-31°00'
175
167
161
141
111
103
86
96
121
131
181
151
145
130
164
121
171
135
111
159
150
122
112
102
137
147
154
102
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139
149
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107
178
157
169
128
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115
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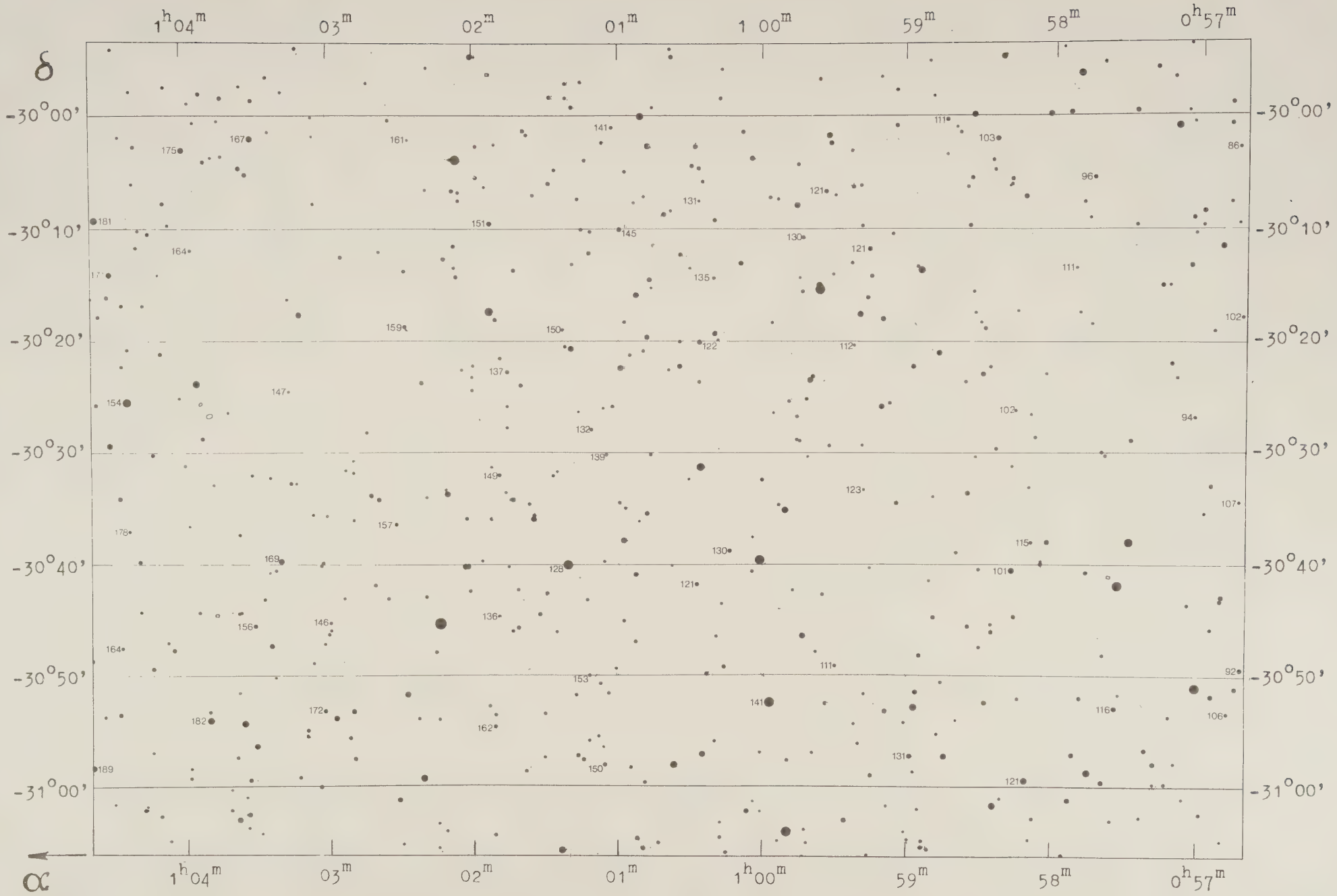
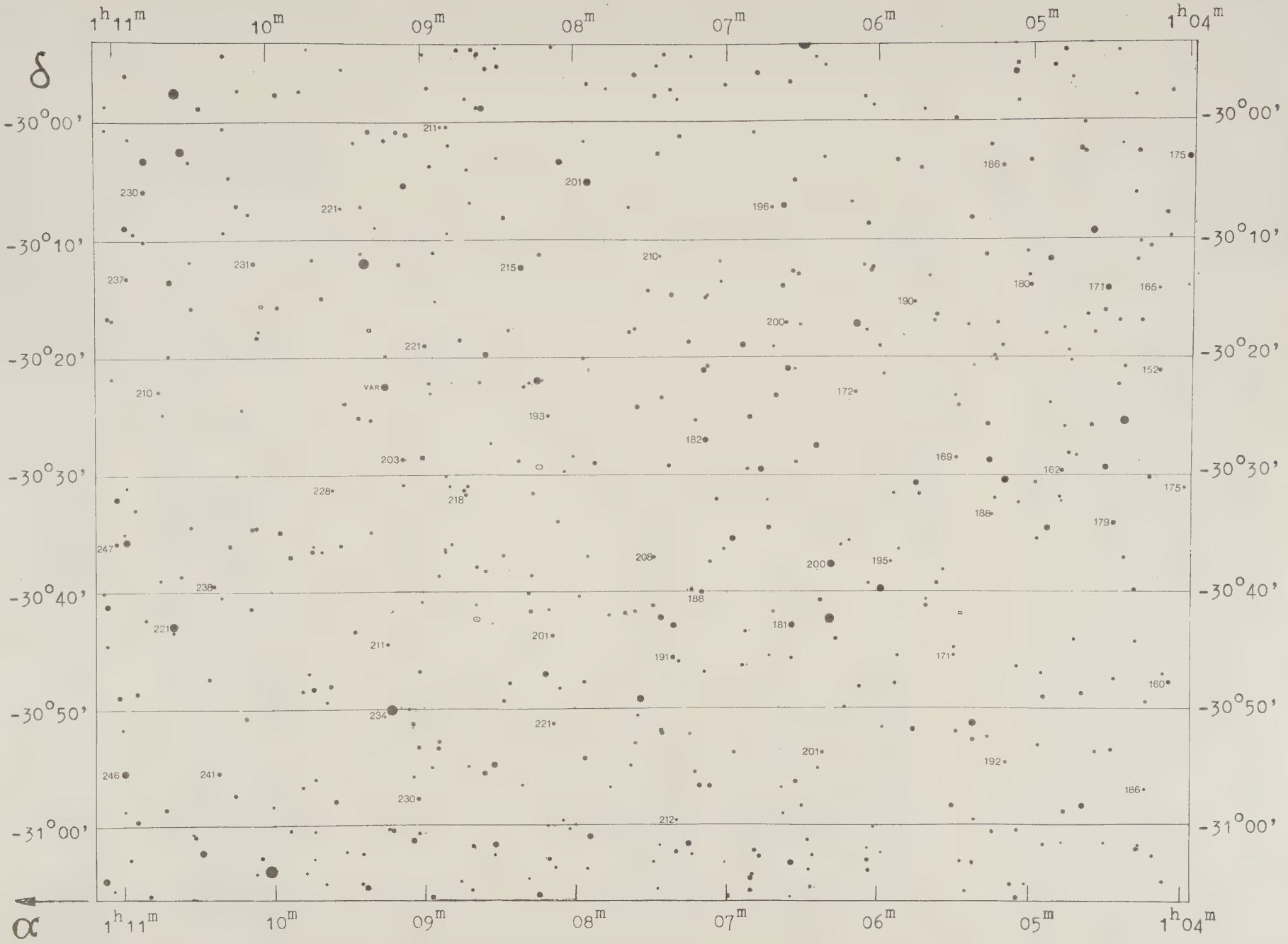
146
136
164
111
153
92
172
141
116
106
182
162
131
189
150
121


δ
α
1h04m
03m
02m
01m
1 00m
59m
58m
0h57m
-30°00'
-30°10'
-30°20'
-30°30'
-30°40'
-30°50'
-31°00'
167
175
161
141
111
103
86
96
121
131
181
151
145
130
164
121
135
111
159
150
122
112
102
137
147
154
102
94
132
139
149
123
107
157
178
115
130
169
128
101
121
136
156
146
164
111
92
153
141
116
106
172
182
162
131
189
150
121


δ
α
1h11m
10m
09m
08m
07m
06m
05m
1h04m
-30°00'
-30°10'
-30°20'
-30°30'
-30°40'
-30°50'
-31°00'
VAR
211
201
230
221
196
175
186
231
215
210
237
180
171
165
190
200
152
172
193
182
203
169
162
228
218
175
188
179
247
208
200
195
238
188
181
221
211
201
191
171
160
234
221
246
241
201
192
230
186
212

4. THE SPECTROPHOTOMETRIC DATA

4.1 The plates.

The SGP-region has been covered with spectral plates taken with the Schmidt-Väisälä telescope of the Uppsala Southern Station at the Mount Stromlo Observatory. The instrument was equipped with an objective prism giving a dispersion of about 470 Å/mm at H_γ. The 36 plates used were Kodak IIa-O with exposure times varying from 2 minutes to 100 minutes. All 2 minutes exposures and half of the 10 minutes exposures were taken with the prism crossed by grating.

4.2 The recordings and the measurements.

The spectral images were recorded with the self-recording photoelectric photometer of the Uppsala Observatory. The slit was adjusted to give tracings corresponding to those obtained from plates taken with the 15 cm Zeiss-Heyde astrograph in Uppsala and used for the spectrophotometric work in Uppsala (Ljunggren, Oja 1961).

The tracings were measured in the usual way (Malmquist, Ljunggren, Oja 1960). The spectrophotometric quantities of the Uppsala spectral classification were determined with the following additional colour equivalents:

$$U_1 = m_{3704} - m_{3780}$$
$$U_2 = m_{3650} - m_{3704}$$
$$U_3 = m_{3548} - m_{3650}$$
$$U_4 = m_{3455} - m_{3548}$$

measured in the way described by Rydström (1976).

4.3 The reductions.

The photometric grating constant for the Uppsala Schmidt telescope at Mt Stromlo was determined by means of monochromatic magnitudes m_{4400}, computed from the UBV-data of Bok's photoelectric sequence in S. A. 141. Hereby, the relation given by Ljunggren and Oja (1961) was used. The result is

$0\overset{m}{.}981 \pm 0.008$ (m.e.)

For some very bright stars the third-order images were used. The magnitude difference between the third-order and zero-order images was determined to

$3\overset{m}{.}47 \pm 0.04$ (m.e.)

For the grating plates the reduction curves were constructed in the usual way. For the plates without grating monochromatic mag-

nitudes derived from the grating plates or computed from BV-data were used.

A IIa-O plate has such a colour sensitivity that separate reduction curves are often needed for different wavelength regions, especially for longer exposures. At the most, three different curves were used. The computer programme used for the reductions and computations of the spectral quantities was originally written for an IBM 1620 (Eriksson 1966), but was later revised for the larger computers of the University of Uppsala.

4.4 The corrections.

4.4.1 Centre correction.

A centre correction was applied for stars outside the non-vignetted field, which has a radius of 100′ with the objective prism of 45 cm diameter.
The correction was computed from the geometry of the telescope.

4.4.2 Atmospheric extinction.

The effect of atmospheric extinction is included in the zero-point corrections whenever present. The variations of the extinction over the plates never exceed $0^m.009$ and were neglected.

4.4.3 Zero-point corrections.

m_{4400}:

The zero-point corrections of m_{4400} were determined by matching all pairs of overlapping plates to a consistent system, arbitrarily defined by one plate, which was later transferred to the final system by means of photoelectric V and B-V data (Table 3).

C_1:

The relation $C_1 = f(B-V)$ given by Ljunggren (1965) was used for 80 stars with $B-V < 0.72$. The weights for the difference C_1 (computed - observed) were taken from the observed C_1. (See 4.8). The zero-point corrections were determined individually for each plate.

C_3:

The corrections were derived individually for each plate from C_3, computed either from photoelectric B-V or from C_1 by the relations $C_3 = f(B-V)$ and $C_3 = f(C_1)$, (Ljunggren 1965, fig. 12 and 13).

$U_1 - U_4$:

In most cases all measurements for these colour equivalents were reduced by the same reduction curve. Only for those plates, where it was necessary to use a different curve for m_{3780}, zero-point corrections were applied.

g:

A consistent system of relative zero-points for all plates was determined, first by matching each pair of 16 plates with the greatest number of stars in common by the method of least squares and then by successive extension to the whole region.

4.5 The transformations.

All spectral quantities were transformed to the system of the Zeiss-Heyde astrograph. The relations used for this transformation were derived by Ljunggren (Ljunggren and Oja 1965).

For the spectral quantities g and c, in the Schmidt telescope system, the transformation relations were determined by means of the photoelectric narrow-band observations of g_e and c_e, reduced to photographic g and c (Zeiss-Heyde) by the relations given by Häggkvist and Oja (1970). Since the weather conditions were not perfect by these observations, only zero-points could be derived with certainty. 35 stars were observed.

4.6 The spectral types.

The spectral types were determined from the measured quantities in the way described by Ljunggren and Oja (1961). The late-type stars were divided into luminosity classes d, dg, and g, (dwarfs, subgiants, and giants) by means of the spectral criteria g and c (Ljunggren and Oja 1961, Fig. 1). No separation was made between luminosity classes g and c ("supergiants").

4.7 The mean errors.

The mean errors of single determinations are given in the following table for some of the spectral quantities in the catalogue. Unit: $0^m.01$.

Interval of magnitude	m_{4400}	H_γ, H_δ	G	g,c	C_1 0-50	C_1 51-	U_2
- 8.99	10	8	9	8	7	7	8
9.00-10.99	8	8	8	7	5	9	9
11.00-12.99	6	6	7	6	6	10	10
13.00-13.99	7	6	7	7	7	11	11
14.00-	9	9	11	8	8	11	–

4.8 The spectrophotometric catalogue.

4.8.1 The catalogue.

Column 1 NO — The number in Table 3 or in the photographic catalogue.

Column 2 m_{4400} — Monochromatic magnitude.

Column 3 SP — Uppsala spectral type. Luminosity classes d, dg, and g are printed in capital letters.

Column 4 H_r — Reduced H_γ intensity, unit $0\overset{m}{.}01$. $H_r = 0.5(H_\gamma + H_{\delta r})$, where $H_{\delta r}$ is the intensity of H_δ reduced to that of H_γ according to Table 2 by Ljunggren and Oja (1961).

Column 5 G/H_r — The ratio of the intensity of the G band and the reduced H_γ intensity.

Columns 6 - 13 — Spectral quantities H_γ, H_δ, K, G, g, c, 4385, 4227 (unit $0\overset{m}{.}01$), reduced to the system defined by the Zeiss-Heyde astrograph.

Column 14 C_1 — Colour equivalent $m_{4030} - m_{4400}$, unit $0\overset{m}{.}01$.

Column 15 C_3 — Colour equivalent $m_{3780} - m_{4400}$, unit $0\overset{m}{.}01$.

Column 16 U_1 — Colour equivalent $m_{3704} - m_{3780}$, unit $0\overset{m}{.}01$.

Column 17 U_2 — Colour equivalent $m_{3650} - m_{3704}$, unit $0\overset{m}{.}01$.

Column 18 U_3 — Colour equivalent $m_{3548} - m_{3650}$, unit $0\overset{m}{.}01$.

Column 19 U_4 — Colour equivalent $m_{3455} - m_{3548}$, unit $0\overset{m}{.}01$.

Column 20 W — Weight code. W = abcd.

a = weight of m_{4400} and C_1

b = weight of "early-type" criteria, columns 4-9

c = weight of "late-type" criteria, columns 9-13

d = weight of $U_1 - U_4$.

Column 21 REM — Remarks.

A. Measurements may be disturbed by adjacent faint star.

C. Measurements seriously disturbed or made impossible by overlapping images.

D. Double star.

R. HD 6268, an extremely metal poor halo giant (Evans et al., 1964).

4.8.2 The completeness of the catalogue.

The spectrophotometric catalogue is complete to V = 12.75 over the whole region.

NO	m_{4400}	SP	H_r	G/H_r	H_γ	H_δ	K	G	g	c	4385	4227	C_1	C_3	U_1	U_2	U_3	U_4	W	REM.
29.0.033	12.17	F5	34.3	0.89	38	32	85	31	14	3	29		40	98	25	-5			3221	
29.0.034	13.26	GG8						77	34	45	41		73						1010	
29.0.038	12.53	F8	31.1	1.25	34	28	86	39	13	-1	30		45	105	1	11			3221	
29.0.040	13.10	F2	34.4	0.27	26	54	45	9					34	76					1000	
29.0.043	12.40	GK2						65	52	43	41	32	113						2020	
29.0.044	12.90	DK0						81	40	8	40		53	91	20				1010	
29.0.047	12.80	DK0						81	40	12	46		65						1010	
29.0.048	12.04	GG0					95	44	20	11	29		50	103	27	-12	29		3231	
29.0.049	12.73	DK2						59	47	3	40	26	76						1010	C
29.0.053	13.00	F5	36.6	0.84	33	50		31	9	11	22		36	85					2110	
29.0.057	11.00	F8	25.1	1.27	24	26	108	32	19	4	16		43	104	35	11	36	47	3332	
29.0.069	12.65	DK2						81	45	14	48		79	137					1010	
29.0.073	9.76	GK5					179	65	69	30	39	25	136	255	35	-2	64	25	9293	
29.0.076	10.99	A2	60.6		63	71	48						31	114	43	21	26	47	9803	
29.0.079	13.06	F6	39.8	1.10	42	45		44	7	10	34		31	91					1110	
29.0.093	11.71	F5	33.8	0.87	35	36	77	29	13	12	22		47	106	25	28	19	33	5432	
29.0.094	13.07	F8	28.7	1.48	27	32	70	42	18	15	39		40						1110	
29.0.101	11.70	DGG5					97	54	25	10	31		57	107	21	7	45	45	6162	
29.0.103	13.89	DG0					63	44	24	2	30		39						1100	A
29.0.105	13.50	DG0					81	48	17	7	31		47	97					1110	
29.0.111	12.36	F8	27.6	1.41	26	29	96	39	23	2	24		43	89	26	9	43	39	5352	
29.0.113	14.33	DGG5						60	31	10	26		55	133					1010	
29.0.116	13.70	DK0					93	66	36	7	44		69	164	50	-7			3120	
29.0.118	13.60	DGK0					100	52	43	16	31	14	92	205	18				2121	
29.0.119	13.86	DK2						67	45	8	40		68	145					2020	
29.0.130	13.20	GG0					55	51	25	16	32		48						2120	C
29.0.131	13.25	GG0					96	61	16	13	26		52						1010	
29.0.133	12.14	DGG8					116	54	36	16	34		65	145	13	6	59	52	8482	
29.0.134	12.48	DG5					81	52	25	6	33		50	97	32	12	32	74	8162	
29.0.137	13.95	DG0					98	44	22	6	31		55	116					2121	
29.0.138	9.97	DG8					111	54	33	9	33		66	123	21	20	51	57	9999	
29.0.145	14.25	DGG0						64	28	14	39		48	116					1010	
29.0.148	13.36	F8	22.9	1.44	23	23	91	33	15	13	21		47	108	31	-14	45		3132	
29.0.152	13.08	F8	31.6	1.27	29	38	108	40	19	11	22		43	98	21	4	57	37	6252	
29.0.161	13.89	DGG8						64	34	18	49		79	153	-17	20			3031	
29.0.169	14.75	GK5						62	64	49	59		102						1010	
29.0.172	14.50	DGK0						61	39	19	35		73	119					2020	
29.0.173	11.63	DGK0					119	52	39	20	40		75	161	11	6	69	25	8483	
29.0.174	13.25	F8	37.8	1.09	41	40	105	41	12	9	16		42	110	11	4	37		4222	
29.0.177	13.52	F8	29.6	1.27	27	35	113	38	17	8	24		42	118	36	16			3231	
29.0.180	13.61	F5	28.4	0.79	28	28	90	22	4	16	20		43	131					2110	
29.0.181	13.53	DG0					79	32	19	7	28		46	120	14				3121	
29.0.184	12.30	F5(A)	30.1	0.78	31	31	66	24	8	12	17		39	89	31	29	37	48	7633	
29.0.189	14.45	DK0						72	35	9	45		61	106					2020	
29.0.193	12.76	DK2					94	59	44	13	37	24	75	169	1	8	46	41	5252	
29.0.197	12.65	F5(A)	32.3	0.77	36	28	70	25	14	6	19		41	104	44	12			4421	C
29.0.199	13.75	F8	34.7	1.29	36	37	114	45	19	10	26		43	115	25	17			3221	
29.0.200	11.63	F8	26.7	1.23	27	28	87	33	16	10	20		45	98	41	11	44	35	6365	
29.0.203	14.96	DG5						72	25	7	44		52	109					2020	
29.0.206	14.10	DGG5						50	35	16	40		67	126					3120	
29.0.212	9.56	DG0	17.0	1.95	18	16	59	33	21	7	20		52	121	19	8	47	56	9398	
29.0.214	12.55	DK0					116	38	42	10	28		77	169					4240	
29.0.215	13.57	DGK0						52	48	15	43		67	164					2020	C
29.0.223	12.86	DG0					137	40	22	6	28		47	103	25	13	50	45	5241	
29.0.224	12.67	DG0					106	37	19	8	29		47	112	28	-1	52	69	5142	
29.0.229	14.25	F8	31.7	1.56	28	40	88	50	22	13	34		46	97	24	-16			2110	
29.0.232	13.76	GG0					109	59	22	17	49		54	125					2120	
29.0.236	11.18	F5	25.2	0.98	28	22	90	25	14	6	23		55	112	40	5	60	63	4343	
29.0.237	12.91	DG5					101	41	25	9	36		58	139	9	13	38	17	2121	
29.0.238	13.13	F8	30.9	1.22	33	29	107	38	14	21	29		43	103	26	0	39	43	3221	
29.0.242	13.11	F5	41.4	0.65	47	41	84	27	8	16	28		36	98	6	12	37	29	3121	
29.0.244	12.44	DG0					44	44	18	8	33		59	101	32	9	37	51	4222	
29.1.012	11.49	GK5						40	65	22	39	28	113						1010	C
29.1.030	10.47	GK5					198	59	69	30	46	21	130	257	31				2130	
29.1.041	12.22	F5	38.2	0.52	37	48	70	20	14		21		40	85	40	-1	46	2	3311	
29.1.044	12.36	DG5					89	57	25	8	33		56	108					3130	
29.1.057	12.90	DGK0						45	44	24	51		32						1010	
29.1.065	9.95	F5	31.8	0.78	33	32	104	25	13	11	22		46	109	31	11	49	45	9986	
29.1.072	11.93	F6	28.9	1.26	29	28	94	27	16	9	26		42	99	41	-1	43		5331	
29.1.078	11.61	F8	29.0	1.26	34	24	77	37	20	6	24		52	106	24	12	37	59	7363	
29.1.079	13.39	DG8					117	40	30	9	26		68	139	9	32			1011	
29.1.080	12.02	F8	26.8	1.41	29	24	94	33	23	4	23		49	98	18	18	44	70	5153	
29.1.081	13.90	DGK0						79	41	22	39		100						1010	
29.1.086	13.59	DG5					153	47	33	11	45		63	146	27				1030	
29.1.088	12.70	F5	34.7	1.05	34	41	104	37	19	8	29		48	82	41				2222	
29.1.090	11.27	DG8					108	57	34	9	33		67	140	8	9	55	51	5353	
29.1.093	13.72	DG8					107	46	30	7	30		54	123	24	2	48		1010	
29.1.094	13.85	DGG5						67	33	14	46		64	175					1010	
29.1.096	11.35	GK0					117	51	42	30	36		90	188	10	7	73	45	9293	
29.1.100	13.90	DK2					88	70	47	8	45	19	72	116	0	28			2121	
29.1.102	13.66	DK5						74	73	11	54	32	117	199					2020	
29.1.103	13.66	DG8					125	45	30	7	44		72	91					2120	
29.1.104	13.80	DGG5					92	55	33	13	32		60	118					2120	
29.1.106	11.34	DG8					105	52	30	4	32		58	119	22	14	44	51	9896	
29.1.110	11.98	F5	27.9	1.01	26	31	67	28	14	10	17		41	73	18	17	33	37	7653	
29.1.112	14.19	DGG8						80	36	13	36		54	146					1010	
29.1.123	13.74	DG5					111	53	27	2	34		55	135					3130	
29.1.128	14.20	GK0						77	43	42	43		95	145					2010	
29.1.129	12.09	DGG5					123	51	31	15	32		66	126	20	6	70	43	9493	
29.1.134	11.27	DG0	20.8	2.27	22	20	92	47	23	6	24		52	109	25	15	31	51	9299	
29.1.136	13.40	GG8						38	34	22	29		62	144	18	29	21		3031	
29.1.141	12.43	F8	26.2	1.48	28	24	110	38	21	10	26		48	115	26	2	72	60	8282	
29.1.146	11.44	GK2					146	70	56	36	45	27	105	212	21	-3	70	42	9292	
29.1.148	14.54	GG0						60	21	12	36		64						1010	
29.1.150	12.67	DG5					103	41	25	8	34		51	114	30	10	36	59	6152	
29.1.152	13.31	DK0					122	47	35	4	33		58	114	23	23	7		4131	
29.1.153	13.62	DK0					101	58	44	11	43	14	76	169					3130	
29.1.154	11.40	F8	27.8	1.10	27	28	91	31	15	12	21		46	107	31	12	44	49	9987	
29.1.156	14.85	DGG5						90	30	16	47		58						1010	
29.1.160	14.47	GK0						84	39	30	67		77	105					1010	

NO	m_{4400}	SP	H_r	G/H_r	H_γ	H_δ	K	G	g	c	4385	4227	C_1	C_3	U_1	U_2	U_3	U_4	W	REM.
29.1.163	14.82	GK0						92	39	26	63		72						1010	
29.1.164	14.32	DGK0						77	40	19	55		64						2020	
29.1.169	11.04	F5(A)	29.9	0.55	29	32	56	16	8	10	20		39	90	22	10	27	42	9947	
29.1.171	14.54	DG5						81	27	8	50		66	105					1010	
29.1.176	12.68	F8	27.0	1.00	25	29	89	27	11	7	23		43	96	33	10	36	60	5342	
29.1.180	14.08	F8	28.7	1.48	28	29	102	42	21	14	38		57	107	30				2220	
29.1.181	14.38	GG5						92	30	24	49		71	114					2020	
29.1.183	14.67	GK0						90	39	24	55		62						1010	
29.1.185	14.29	F8	31.2	1.29	35	27	75	40	22	7	16		52	98					2120	
29.1.186	14.87	GK2							51	25	74		94						1010	
29.1.188	13.59	DG5					131	59	27	7	22		57	116	22	11	65		3131	
29.1.190	11.31	F5	34.4	0.96	36	36	92	33	14	8	21		44	103	28	10	45	51	9498	
29.1.191	14.19	DK2					58	64	46	4	24		79	133					1110	
29.1.195	13.05	GG0	19.2	1.66	24	14	61	32	13	13	24		49	97	28	23	34	45	4242	
29.1.204	13.57	GK0						64	46	31	48	22	99	216					3020	
29.1.205	14.23	DGG0						59	23	11	39		70	119					2020	
29.1.210	13.90	DGG0					114	58	28	11	48		64	119					2120	
29.1.215	13.48	F8	31.3	1.55	32	33	93	48	25	19	29		48	93	22	3	71		3131	
29.1.222	13.83	F8	35.2	1.40	28	53	132	50	15	10	34		52	114	15	19			3131	
29.1.223	12.17	DG0					86	28	15	3	17		47	88	24	17	31	57	2121	
29.1.224	12.68	DGG0					94	44	26	11	29		56	120	24	25	37	41	2321	C
29.1.228	10.29	GK2					147	61	50	29	36		98	203	17	8	93	47	9393	
29.1.232	11.79	DG5					114	51	28	7	28		51	131	20	7	58	50	5352	
29.1.233	11.76	F8	30.4	1.20	31	32	97	37	24	2	31		51	126	10	10	59	45	5442	
29.2.005	12.56	DK2						74	51	8	54		73						1010	
29.2.025	12.82	F8	33.2	1.03	36	32	71	34	9	13	19		42	83					2110	
29.2.041	12.84	F5	33.8	0.94	36	34	64	32	20	1	29		37	72					2110	
29.2.055	10.74	GK0					120	65	44	28	34		83	184	14	-6	52	15	9382	
29.2.057	12.49	DGG5						62	32	17	36		58	126					3030	
29.2.060	12.11	F8	30.7	1.11	31	33	88	34	18	8	32		43	100	15	16	31	24	4321	
29.2.066	11.61	F5	37.8	0.87	41	40	74	33	12	13	28		44	112	9	26	25	35	5432	
29.2.069	13.16	GG0						66	25	22	44		48						1010	
29.2.073	12.08	F8	24.0	1.08	23	25	95	26	10	9	23		39	100	24	15	16		4340	
29.2.081	14.21	DGK2						79	52	24	54		101						1010	
29.2.082	14.58	DG8						34	31	3	39		56						1010	
29.2.083	14.00	DG8					110	84	31	8	26		56	127	40	-40			1010	
29.2.090	13.90	GG8						72	35	23	33		62	149					1010	
29.2.092	11.23	F5	29.6	0.84	29	31	93	25	13	9	19		45	101	30	15	34	53	9643	
29.2.093	12.59	F5	29.3	0.84	27	34	85	25	13	8	22		34	81	28	21	33	35	4231	
29.2.103	13.16	DG8					119	47	31	8	29		59	139	-18	8	57	27	3231	
29.2.105	12.49	GG5					173	39	31	26	33		74	175	9	7	62	41	5251	
29.2.107	13.37	DG8					108	55	31	3	34		56	135	10				4231	
29.2.109	13.54	DK5						59	75	-9	47	76	120	194					2020	
29.2.111	10.79	DGG0					104	46	28	12	30		62	134	17	7	63	57	9999	
29.2.115	12.95	DGG0					106	59	27	10	31		56	118	27	-8	69	52	6161	
29.2.117	11.70	F5	29.6	0.88	29	31	83	26	16	3	23		42	103	30	12	38	42	9997	
29.2.118	14.70	GK0						78	46	39	60		110						1010	
29.2.119	14.44	DK2						71	55	10	52		75						2010	
29.2.121	11.62	DGG8					129	57	38	20	36		78	157	16	5	90	38	9494	
29.2.124	12.74	DGG5					101	44	25	10	28		50	105	33	-11	55	56	7472	
29.2.125	14.36	DG5						53	27	9	56		58						2020	
29.2.126	11.73	DG0					97	38	19	9	22		49	110	17	9	58	45	9895	
29.2.132	13.30	A5	47.7		52	54	63						30	98					4320	
29.2.133	12.96	DG0					122	48	23	9	32		54	122	-1	31			5251	
29.2.134	14.30	GG5						59	31	21	50		72	142					2020	
29.2.137	13.13	DG8					119	58	32	9	35		62	121	37	-2			4141	
29.2.144	13.41	GG0						35	26	17	41		58						1010	C
29.2.145	13.29	GG0					103	44	22	12	34		59	145	4	10			2111	
29.2.148	14.13	DK2						70	49	14	56		72	153					2020	
29.2.150	12.75	DG0					99	39	18	9	28		50	109	28	0	56	58	6352	
29.2.151	14.41	DG8						57	33		25		65	102					2020	
29.2.154	11.48	DK0					110	52	37	9	35		64	131	14	1	82	58	9595	
29.2.155	14.13	DG8						50	34	10	40		63	126					2120	
29.2.165	12.97	DG5					111	44	25	10	32		57	130	19	26			3131	
29.2.166	13.33	DG0					106	47	17	8	35		43	111	4	19	2		3131	
29.2.170	12.12	DG5					95	39	28	9	26		51	121	20	9	49	51	8473	C
29.2.177	14.11	DG5					82	38	29	9	25		58	84					2120	
29.2.179	12.75	DK2					135	58	47	9	35	26	80	158	17	1	84		6262	
29.2.181	12.36	F5	28.9	0.94	29	28	85	21	11	11	21		40	94	29	15	38	41	6453	
29.2.182	12.78	DG5					123	45	27	7	34		57	121	3	26	55	32	6162	
29.2.186	14.54	DGG8						70	36	12	38		68						1010	
29.2.189	13.48	DG0					124	53	24	9	40		55	131	22	17	26		3131	
29.2.200	12.11	F5	30.4	0.85	29	34	87	26	13	8	22		34	79	27	6	37	50	6543	
29.2.203	11.01	F5	26.7	0.97	26	27	91	26	16	7	18		45	110	36	13	52	54	6756	
29.2.215	13.04	F8	27.9	1.95	31	25	77	54	21	7	23		46	109	44	12	31	43	2131	
29.2.220	9.48	DGG8					94	48	35	16	32		77	166	15	5	86	42	9794	
29.3.002	10.22	F8	19.6	1.20	18	21	71	24					45	93	12	19	63	59	1111	
29.3.012	12.34	DG8					100	37	31	3	32		54	91	20	6	18	20	2121	
29.3.019	11.11	DK0					105	52	40	6	36		75	160	9	1	87	7	3231	
29.3.025	11.80	F8	23.5	1.25	26	21	76	29	19	3	19		52	97	36	-3	53	37	3321	
29.3.028	12.96	GG0						53	21	12	30		44	89					1010	
29.3.029	11.71	F5(A)	32.4	0.62	33	35	65	20	6	8	20		41	102	30	10	33	26	3322	
29.3.037	13.13	F8	30.7	1.11	29	35	57	34					34						1110	
29.3.048	12.03	DG8					97	45	32	4	35		56	128	17	14	0		4121	
29.3.050	12.15	DG5						21	28	-3	22		69						2010	C
29.3.052	12.27	DGK0					102	58	39	13	45		59	130					3120	
29.3.058	12.95	F8	30.2	1.29	39	21	79	39	13	10	20		38	85					2110	
29.3.076	11.41	DGG8					124	52	34	13	32		66	134	13	13	29	22	8462	
29.3.078	11.47	DG8					95	46	30	4	32		62	120	21	11	56		6241	
29.3.081	13.20	DK5						73	73	-7	31	33	86	175					1010	
29.3.082	14.35	DK0						57	35	10	31		57						1010	
29.3.083	13.06	GG0					131	48	26	15	36		53	138	17	2	25		1111	
29.3.087	10.11	DGG5					104	51	32	11	33		65	144	17	8	64	52	9895	
29.3.088	13.23	DGG5					135	58	33	12	32		62	160	9				1111	
29.3.091	13.51	GG0					106	41	14	12	23		49	114	6	35	56		1011	
29.3.096	4.04	B5	35.1		38	40	19						17	56	45	13	28	38	9909	
29.3.098	12.12	DG8					104	46	32	3	32		60	118	27	5	34	44	6252	
29.3.099	13.15	GG5					126	54	29	20	24		74	172	5	26	52		4141	
29.3.100	14.65	GK5						73	66	32	56		94						1000	
29.3.101	14.51	DGG8						77	36	13	22		52						1010	

NO	m_{4400}	SP	H_r	G/H_r	H_γ	H_δ	K	G	g	c	4385	4227	C_1	C_3	U_1	U_2	U_3	U_4	W	REM.
29.3.114	13.72	DGG5					122	68	32	14	35		70	134					2120	
29.3.116	13.44	F8	26.2	1.75	26	26	89	46	23	13	26		43	118	21	28			4131	
29.3.119	12.29	DG0					82	33	9	6	21		32	79	28	22	37	37	8183	A
29.3.127	14.09	DK5						57	59	10	47	25	85	142					2020	
29.3.132	13.45	DK0					135	55	37	8	33		60	132					4140	
29.3.133	13.51	GG0					109	52	24	19	37		60	144					4140	
29.3.150	12.36	GK0					180	55	45	41	46	24	88	179	22	-5	54		6162	
29.3.154	12.17	DGG0					116	44	26	10	31		57	122	27	8	59	83	7473	
29.3.156	11.55	F8	22.9	1.03	23	23	74	24	15	7	20		57	115	28	9	48	60	5143	C
29.3.163	10.64	F8	33.0	1.00	34	35	91	33	16	6	20		43	100	30	14	42	58	9999	
29.3.164	14.48	DG0						64	22	9	45		53	89					1010	
29.3.168	13.93	DK0					95	54	35	6	39		61	129	8	-8	41		2120	
29.3.172	9.46	F5(A)	35.3	0.50	36	39	66	18					39	103	35	17	41	45	9999	
29.3.180	14.41	DG8						57	32	7	40		56	118					2020	
29.3.183	13.82	DK0					108	45	35	9	28		63	126	6	22	34		2110	
29.3.185	14.26	DK0						58	42	9	49		67	187					2020	
29.3.186	13.35	F8	24.6	1.73	25	24	103	42	20	11	21		50	110	32	-10	73	28	3231	
29.3.189	11.31	DGG0					105	44	24	10	29		59	120	23	8	54	53	8686	
29.3.194	13.44	F5	30.7	0.65	31	33	62	20	13	5	19		41	99	20	13	42		3221	
29.3.195	13.55	DG0					94	48	24	9	29		49	121	7	18	21	23	3231	
29.3.197	14.53	DG0						84	22	7	43		58	85					2010	
29.3.198	13.02	F8	31.2	1.02	39	23	98	32	13	12	22		42	106	20	7	43	40	4341	
29.3.202	14.04	DG0					127	55	21	10	41		62	123					2120	
29.3.203	14.28	F5(A)	43.1	0.98	42	57	57	42	10	17	13		39	67	24	-3			1110	
29.3.204	13.38	DG0					103	52	23	9	23		54	120	27	25	26		3231	
29.3.212	12.40	F5(A)	35.3	0.53	35	42	65	19					36	95	32	2	47	45	4412	
29.3.220	11.47	F5	24.1	0.98	27	21	80	24	15	6	21		46	103	33	9	46	41	3233	
29.3.224	13.06	F8	27.3	1.12	27	27	119	31	16	8	25		42	99	37				3131	
29.4.004	12.65	DG5						42	29	1	43		48	103					1110	
29.4.016	10.33	DG5					106	44	27	3	23		52	119	25	3	61	83	0001	
29.4.025	11.22	GK0					129	52	44	31	31		91	182	10	6	41		3232	
29.4.031	10.73	F2	41.8	0.42	45	47	46	18					36	106	49	15	34	53	2313	
29.4.045	12.22	DGG5					90	54	29	10	28		60	124	18	-17	43		3131	
29.4.047	11.73	F8	30.1	1.14	33	27	80	34	18	9	23		50	114	8	25	18	24	3332	
29.4.051	12.71	F8	34.1	1.17	35	37	64	40	17	4	20		41	78					3220	
29.4.055	12.44	F8	25.7	1.15	28	23	73	29	11	10	22		43	92					3230	
29.4.057	12.50	DK0						53	37	11	40		62	104					3030	
29.4.058	12.92	F8	27.4	1.94	33	22	59	53	16	15	31		50						2120	
29.4.064	11.83	F8	28.4	1.29	28	28	113	37	24	5	31		57	122	13				3231	
29.4.076	11.33	DGG5					123	58	33	10	38		67	133	20	6	40	55	5152	
29.4.083	11.13	DG0	18.6	1.90	23	14	57	35	18	7	17		53						5140	C
29.4.084	10.37	F5	31.0	0.65	32	32	91	20	11	12	17		44	105	33	20	40	53	9857	
29.4.085	13.42	DG0					119	38	21	6	39		56	111	35	23			1111	
29.4.089	14.59	DG8						103	30	-9	23		54						1010	
29.4.090	12.06	DGK0					103	51	39	13	40	16	69	151	12	14	56	73	4241	
29.4.091	11.18	GK2					130	57	51	27	39	12	96	189	22	-3	80	46	8282	
29.4.095	14.11	DG0						61	18	4	30		39						1010	
29.4.098	14.55	F5	38.9	0.79	42	42		31	15	13			47						1110	
29.4.100	12.01	F8	28.4	1.08	28	28	75	31	18	10	20		45	91	26	10	43	46	4432	
29.4.101	10.79	GK2					125	62	52	42	46		109	210	15	-3	79	77	9394	
29.4.108	9.16	A3	57.1		59	67	40						34	108	43	18	45	50	9909	
29.4.110	12.93	F8	29.0	1.26	32	26	107	37	17	10	21		47	110	28	30	27	41	5252	
29.4.114	14.01	DGK0						61	48	23	40		71	135	17	1			2020	
29.4.122	13.99	DG8						39	33	5	37		63	123					2010	
29.4.126	13.70	DGG5					145	53	32	11	41		57	143	-4	23	51		2121	
29.4.132	12.88	DG8					174	62	38	11	38		68	179	15	5	24	32	6171	
29.4.136	12.85	F0	42.4		43	52	52						30	85	38	46			6512	
29.4.139	11.73	DG0					97	41	21	10	25		53	111	22	7	49	33	9195	
29.4.146	11.86	DGG5					101	47	31	15	31		66	138	25	6	49	47	9284	
29.4.148	6.91	DGG5					129	54	33	17	33		77	162	17	10	62	49	9999	
29.4.153	10.15	F5	29.0	0.85	27	33	93	25	12	12	19		43	104	28	19	47	52	9999	
29.4.155	13.90	DK0						53	35	8	46		58	154					2020	
29.4.170	12.80	GG0					108	35	19	15	24		47	120	18	10	39	67	5342	
29.4.172	13.46	DG5					131	48	26	8	29		59	128	12	25			3131	
29.4.175	11.74	F8	33.8	1.22	36	34	94	41	24	5	25		49	107	27	8	44	50	9284	
29.4.176	14.60	DG0						54	16	5	44		55	83					1010	
29.4.177	12.48	DGK0					165	52	43	23	35	17	86	167	29	14	15	9	7271	
29.4.179	12.29	DG0					94	28	20	7	22		50	109	18	11	29		8564	
29.4.182	12.93	F8	28.1	1.26	21	41	87	35	14	15	38		47	105	33	18	8	59	4232	
29.4.183	14.06	DGG0						64	27	13	37		61	105					2020	
29.4.185	13.86	GK0						87	47	30	45		97						2020	
29.4.189	14.04	DGG0					103	57	23	10	34		54	135	5	-19			2120	
29.4.190	14.37	DG5						71	29	8	37		59	116					2010	
29.4.199	13.64	DG0					143	60	22	7	37		54	118	40	40	0		2120	
29.4.207	12.64	DK2					121	60	43	8	37		69	146	27	-13	83		6262	
29.4.212	14.76	GG8						67	38	24	61		84						1010	
29.4.223	10.49	GK0					124	57	46	30	38		92	187	16	6	85	77	9594	
29.4.228	13.89	DGG5						66	33	18	45		71	152					2020	
29.5.006	12.51	F8	31.7	1.63	36	27	97	52			22		41	86					1110	C
29.5.014	11.70	DG0					73	33	23	10	22		50	105	32	-14	24	51	1111	
29.5.015	12.35	DGK2						46	49	22	50		83	165					1010	A
29.5.016	12.60	F8	34.0	1.00	38	31	74	34	14	-7	20		30	78					2210	
29.5.018	12.62	DG8					60	37	30	3	31		45	79					2020	
29.5.023	12.95	F8	42.0	1.12	47	43	68	47					23	44					2110	
29.5.026	11.74	F8	24.1	1.56	31	18	92	38	25	8	29		57	110	35	6	51		3131	
29.5.050	10.32	GK0					135	53	44	30	29		91	191	10	15	62	46	2322	
29.5.055	11.58	GK2					123	64	49	30	48		92	202	-6	01	28	10	4141	
29.5.062	10.89	F5(A)	29.9	0.55	29	32	65	16	8	9	23		37	96	31	15	31	35	9844	
29.5.064	11.81	DGK0					137	62	48	20	40		80	181					5150	
29.5.067	12.98	F8	29.1	1.42	26	35	14	41	11	11	33		40						2110	C
29.5.073	12.60	F8	39.3	1.20	47	34	100	47	15	13	40		46	74					3220	
29.5.076	12.71	DG0						45	20	7	30		55	108					2020	
29.5.090	13.04	F8	34.4	1.51	35	38		52	16	17	49		44						1110	
29.5.092	10.20	DK5					125	71	75	9	49	35	110	204	28	27	50	101	8492	
29.5.097	14.35	DG0						38	16	4	29		49	117					1010	
29.5.102	14.06	DG5					111	34	26	1	35		40	104	15	22			1010	
29.5.105	13.96	F8	31.3	1.39	41	22		44	22	12	29		50	124					1110	
29.5.106	13.70	F8	30.7	1.08	37	24	71	33	19	10	9		51	119	12	25			1110	
29.5.109	13.62	DGG8						61	38	12	39		77	155	33	3			1010	
29.5.110	13.10	F8	29.6	1.03	28	33	69	31			15		39	104	18	30	19		2111	

NO	m_{4400}	SP	H_γ	G/H_γ	H_γ	H_δ	K	G	g	c	4385	4227	C_1	C_3	U_1	U_2	U_3	U_4	W	REM.
29.5.114	14.21	DGK2						53	51	16	67		74						1010	
29.5.120	14.12	DG5					98	54	26	4	40		49	82	30	20			2120	
29.5.126	11.68	F5	31.6	0.71	32	34	69	22	13	7	23		42	97	27	12	26	51	9998	
29.5.127	14.26	DGG0					83	53	24	12	43		53	98					2120	
29.5.128	12.98	F8	24.7	2.10	31	19	102	52	23	9	30		52	106	19	4	62	35	6252	
29.5.134	11.32	F8	25.1	1.26	27	23	84	32	20	5	21		46	107	24	10	40	47	9899	D
29.5.135	13.79	F8	31.2	1.55	36	26	98	48	25	9	29		56	115	13	27	21		3221	
29.5.137	13.29	DGK0					114	62	47	22	46		82	191	17	-8			4141	
29.5.139	12.85	DG5					145	61	27	9	28		56	125	17	13	96		7271	
29.5.140	14.01	DK2						62	53	9	45		64	150					2020	
29.5.141	12.05	DK0					110	54	39	10	37		63	126	19	10	52	70	9593	
29.5.142	13.42	F8	28.0	1.18	24	35	102	33	15	-7	15		38	98	9				4320	
29.5.153	14.19	F5	38.5	0.98	45	35	87	38	17	14	30		48	113					2220	
29.5.158	14.51	DG5						66	27	9	43		49	82					1010	
29.5.160	11.35	DG5					93	50	28	10	33		63	127	23	8	49	52	9996	
29.5.168	13.88	F8	35.7	1.45	41	33	129	52	26	16	26		53	106	56	19			2120	
29.5.169	13.96	DGG8						57	36	20	46		74	137					2020	
29.5.170	11.09	F8	28.4	1.12	31	26	90	32	19	7	23		47	108	24	17	45	54	9999	
29.5.173	12.33	F8	29.0	1.46	33	25	101	42	21	16	22		54	125	10	25	33	48	8382	
29.5.183	12.90	F8	30.4	1.35	29	34	86	41	18	5	24		46	100	24	7	44	55	4342	
29.5.184	14.36	DG0						38	10	4	32		46	65					2020	
29.5.192	9.46	F2	42.6	0.39	46	48	54	16					36	102	40	17	36	48	9999	
29.5.194	13.06	DG0					113	45	22	8	26		53	140	2	16	17	8	4242	
29.5.195	14.47	GG0					105	52	17	23	48		58	92					2020	
29.5.198	12.83	DK0					147	54	34	9	32		67	152	13	-3	75		5252	
29.5.202	13.97	F5	34.2	0.86	32	43	91	29	14	14	26		54	84	34	33			2120	
29.5.204	14.68	DK0						105	41	13	83		69	151					1010	
29.5.209	12.52	DGK0					151	61	42	17	39		75	179	13	2	81	40	7272	
29.5.213	8.43	F5	27.9	0.80	29	26	81	22	14	5	17		45	107	28	11	40	48	9999	
29.5.214	14.13	F5	38.3	0.89	44	36	88	34	12	12	19		45	92	43	-5	13		2210	
29.5.215	13.61	DG5					122	45	25	7	30		56	131	29	1			3131	
29.5.223	13.70	DG5					141	70	25	8	23		52	121	18	26	5		3131	
29.5.229	14.24	GG0						60	25	28	50		66	110					1010	
29.5.231	12.41	DG5					95	46	26	5	30		52	100	28	9	55	27	7473	
29.5.238	14.11	GG5					98	55	31	20	67		64	131					2010	
29.5.245	13.70	DK2						71	43	9	46		69	151	25	-16			3021	
29.5.247	13.70	GK0						61	42	31	49		92	183					1010	
29.5.252	13.51	DGK0					136	70	45	17	35		79	159	-4	15	31	11	1110	
29.5.254	13.50	DG0					46	44	18	7	26		55						1010	C
29.5.255	9.68	DG5					92	38	25	4	24		58	111	15	4	50	48	9996	
30.0.019	12.44	DGG8						57	35	15	45		58						1010	
30.0.046	12.11	DG0					103	41	18	10	30		54	110	4	20	14		3131	
30.0.055	12.01	DGG0					132	48	26	12	36		61	132	9	8	35		4041	
30.0.057	12.73	F5	36.1	0.95	37	40	88	34	9	17	19		39	112					2120	
30.0.068	13.15	DG8					128	41	33	1	29		57	108	46	-8	45		2121	
30.0.069	10.22	A2	62.5		64	74	56						29	103	58	16	34	41	9928	
30.0.071	11.01	GG5					130	59	33	30	36		75	164	17	-2	73	65	9593	
30.0.079	11.85	GK2					135	57	56	36	41	17	93	186	1	-11			6161	
30.0.080	12.64	F8	26.1	1.67	24	28	107	44	27	7	30		50	102	25	-1	58	31	8262	
30.0.081	14.26	DG0					85	45	24	9	38		49	83					2020	
30.0.090	13.14	DG0					121	46	20	9	26		51	130	14	7	36		4242	
30.0.093	14.43	DGG5						67	31	12	48		65	109					2010	
30.0.094	11.47	DG5					108	46	27	6	28		57	115	25	2	44	52	9397	
30.0.096	13.89	F8	33.8	1.36	35	36	103	46	14	19	25		42	95	1	36	31	-1	3121	
30.0.099	13.50	F8	30.2	1.05	28	35	96	32	14	7	20		43	109					3220	
30.0.100	13.96	F8	27.0	1.31	25	29	117	35	19	9	26		47	100	24	13	-2		2120	
30.0.103	13.00	F8	38.6	1.04	43	39	88	40	20	5	34		44	99	23	12	46	53	5352	
30.0.106	14.06	DK0						75	36	9	33		55	110					2020	
30.0.107	14.61	DK5						79	63	7	68	60	106						1010	
30.0.111	14.17	DG5					92	42	25	9	33		41	86					2110	
30.0.113	14.08	DGG0						66	27	11	44		56	126	4	17			2021	
30.0.119	13.57	DGG0					121	54	25	12	40		55	135					2220	
30.0.120	12.72	GG8					140	55	35	23	35		65	176	20				6161	
30.0.123	13.13	F5(A)	37.7	0.59	42	38	59	22			25		35	95	28	23	19	34	5312	
30.0.132	13.80	GG0						50	23	22	26		69	148					1010	
30.0.133	14.41	DG0						66	14	9	37		49	102	26				1010	
30.0.135	13.40	F8	31.8	1.04	33	33	134	33	15	14	30		44	102	17	21	38	4	3221	
30.0.136	11.90	F8	27.9	1.27	31	25	91	35	19	9	23		47	100	21	5	45	47	9394	
30.0.138	11.00	B8	52.1		55	60	29						18	74	42	15	29	41	9999	
30.0.146	14.48	F8	30.7	1.23	32	31		38	12	17	59		49	98					2110	
30.0.151	13.13	DK0					109	50	35	9	33		57	140					4240	C
30.0.154	14.06	DGK0						77	47	22	54		85	161					2010	
30.0.157	9.00	F5	29.9	0.87	29	32	87	26	11	8	17		47	106	30	14	38	57	9999	
30.0.158	14.58	DK2							46	-1	32		81						1010	
30.0.167	12.14	F8	25.7	1.51	27	24	91	39	20	3	26		46	87	19	5	39	48	9474	
30.0.168	13.32	F5	26.9	0.92	35	19	91	25	15	6	21		45	105	47	12	33	29	3131	
30.0.169	13.04	DG0					102	48	20	10	22		48	117	22	5	71	15	6152	
30.0.173	14.20	F5	36.4	0.94	36	43	76	34	14	10	22		57	122					2110	
30.0.175	12.46	F5	27.8	0.97	27	28	67	27	6	14	20		35	90	30	6	36	52	8584	
30.0.178	14.13	DK0						61	35	6	47		55	116	25	14			2020	
30.0.181	11.79	DK2					118	59	45	9	40	19	74	144	13	4	66	57	9494	
30.0.183	14.66	DK2						83	46	8	70		76	139					1010	
30.0.184	13.51	DG0					98	38	17	7	34		41	95	10	34	18		3231	
30.0.185	14.43	DGG5						79	30	15	47		51	101					2020	
30.0.186	14.19	DG5					82	57	25	9	34		53	112	17	-7			2121	
30.0.187	14.30	DK2						75	57	7	38		81						2010	
30.0.188	13.75	DGK2						70	53	19	45		80	135					2030	
30.0.191	13.78	DG0					111	52	23	5	26		57	110					3120	
30.0.194	14.20	DK0					94	58	37	1	43		68	100					1010	
30.0.195	12.01	F8	29.5	1.08	32	27	86	32	18	6	20		45	99	18	10	47		7474	

NO	m_{4400}	SP	H_γ	G/H_γ	H_γ	H_δ	K	G	g	c	4385	4227	C_1	C_3	U_1	U_2	U_3	U_4	W	REM.
30.0.198	14.33	F8	38.2	1.45	38	45	100	55	16	23	34		53	96					2120	
30.0.199	14.42	GK5						101	79	22	48	54	96						1010	
30.0.201	11.76	F8	25.7	1.42	31	21	91	37	20	7	25		47	89	30	10	46	51	8386	
30.0.203	13.08	DGG0					124	51	28	12	32		67	167	12	21	13	34	4241	
30.0.204	14.41	DG0					83	50	19	7	34		55	110					2010	
30.0.213	13.65	DG0					90	59	22	7	29		57						2130	C
30.0.214	12.74	DK2					137	60	45	14	49		80	182	5	3	57		5141	
30.0.215	14.20	DG8					92	70	33	9	49		63	127	-28	34			2010	
30.0.218	13.46	DG0					122	51	22	7	24		52	124	4	56	23	24	3120	
30.0.223	13.69	F2	31.8		32	40	67						34	111	48				2210	
30.0.228	11.00	GG8					126	55	37	22	35		80	165	22	10	66	70	5464	
30.0.229	11.73	DG0					72	35	20	1	30		39	87	17	9	47		2121	C
30.0.233	12.28	F8	25.7	1.28	27	24	82	33	13	18	28		48	96	27	20	61	37	5252	
30.1.023	12.32	DG8					141	44	31	2	28		53	152					2010	
30.1.034	11.23	A3	54.2		53	68	39						32	114	51	17	33		3301	
30.1.038	11.78	DG5					88	42	26	3	22		60	116	19	-6			3131	
30.1.040	12.25	DG0	21.8	1.73	19	24	77	38	15	7	24		49	91	17				3131	
30.1.041	11.50	F2	34.4	0.34	36	36	70	12					37	97	28	17	25	53	3422	
30.1.080	13.39	DK2						68	46	9	23		77	169	27	0			1010	
30.1.083	14.38	GG0						66	18	15	45	24	58						1010	
30.1.085	14.01	DGG5						60	30	14	30		60	168					1010	
30.1.088	12.91	DG8					137	62	31	9	37		62	118	40				3131	
30.1.092	10.53	DGG5					108	53	29	11	34		83	125	18	18	48	55	9593	
30.1.093	12.88	F5	32.4	0.84	34	33	106	27	13	11	19		42	94	48	-4	56		3231	
30.1.094	12.17	DG5					124	51	29	9	31		59	114	22	13	33		4141	
30.1.095	12.84	GG0					125	44	22	11	36		53	126	4	-3	63		4141	
30.1.097	13.10	F8	39.8	1.21	49	32	123	48	25	8	37		48	115	24	18	39		3221	
30.1.099	13.65	DGG0					141	42	28	11	33		58	121	9	5	43		2121	
30.1.100	13.22	DG8					116	45	33	6	31		58	116	35	12	41		4231	
30.1.103	12.71	GG0					115	50	25	19	33		60	136	15	12	67		6262	
30.1.106	13.30	DG5					132	34	28	4	24		45	130	-3	40	17		2111	
30.1.108	14.01	DGG8						99	35	11	44		62	151					2020	
30.1.117	11.57	F8	29.5	1.08	34	25	87	32	14	11	20		46	99	29	5	45	44	9886	
30.1.120	13.65	DG8					117	64	33	10	49		67	153					3130	
30.1.124	13.30	GK0						52	41	27	38		83	194	20				4030	
30.1.128	9.85	GG5					114	47	31	20	28		74	157	13	4	79	50	9999	
30.1.129	14.32	DK0						51	42	3	29		71	114					2010	C
30.1.130	13.96	DG5					90	35	27	9	30		55						2110	C
30.1.133	13.82	DG8					115	64	32	9	31		71	133	-3	34	33		2120	
30.1.136	13.61	F5	29.5	0.88	23	42	90	26					38	77	42	-7	46		2120	
30.1.138	14.20	DG5					130	51	29	2	34		44	114					2010	
30.1.141	13.26	GK0					116	53	46	37	37		93	171					3130	
30.1.142	13.38	DGK0					139	62	39	15	37		68	142					3130	
30.1.143	12.94	DGG8					142	57	38	18	38		68	151	17	-4	60		6251	
30.1.145	13.37	GG8					151	54	34	24	40		78	170	13	33	-7	13	3030	
30.1.147	14.54	DK5						84	72	6	48	37	89						1010	
30.1.151	13.94	DG8					118	52	30	10	37		56	135	23	1			2110	
30.1.152	14.01	DG5					89	47	25	9	41		54	111					2120	
30.1.153	9.81	A5	53.1		56	62	44						30	101	45	18	37	49	9999	
30.1.157	13.78	DK0					80	74	37	3	34		66	140	48	-16			2020	
30.1.159	14.51	DK5						113	85	1	84	33	98						1010	
30.1.162	12.88	GG0					114	52	25	18	31		60	135	17	20	39	19	5251	
30.1.166	14.12	DGG8						60	38	16	52		75	131	10				2020	
30.1.171	12.60	GG8					162	47	34	19	35		62	147	8	5	60	37	8171	
30.1.177	12.79	DG0					88	44	14	10	30		50	94	25	2	48	63	7352	
30.1.185	14.00	F5	33.9	0.69	33	40	100	24	11	10	22		51	124	4	23			2210	
30.1.193	12.93	GG0					123	31	19	13	29		53	120					3130	C
30.1.196	11.14	F5	28.4	0.79	29	27	91	22	15	8	21		46	110	22	14	41	48	9997	
30.1.201	13.49	DG5					120	57	28	7	33		68	141					2130	C
30.1.203	12.97	DK5					148	74	62	11	45	24	87	193	27	-28	47		4141	
30.1.208	14.37	F5	59.8	0.89	74	59	71	53	19	-2	29		47	111					2110	
30.1.209	13.48	DG8					122	50	34	4	37		65	122	32	-6	67		3121	
30.1.215	12.29	F8	29.7	1.55	41	19	105	46	26	7	28		54	120	15	6	49	41	6302	
30.1.217	12.30	F8	26.3	1.35	31	22	93	35	18	11	31		47	109	19	10	39	56	7173	
30.1.218	13.90	F8	38.3	1.02	43	38	104	39	20	8	32		57	131	31	7	30		3121	
30.1.222	14.01	DG0					87	33	12	9	25		52	96	21	53			2111	
30.1.224	10.10	GK0					133	57	47	31	36		98	202	16	5	61	78	9895	
30.1.231	13.53	DGG5						45	31	12	33		60	127	28	7	20	14	2020	
30.1.234	12.30	DG0	21.3	1.60	22	21	83	34	14	5	25		41	102	23	13	24	38	5242	
30.2.019	11.51	F5	28.4	0.79	27	31	84	22	7	11	16		44	105	13	15	20		1110	
30.2.024	12.11	DK0						58	40	12	40		74	157					2020	
30.2.045	12.77	F8	22.4	1.47	24	21		33	22	4	21		45	75					1010	
30.2.050	12.02	DG0					95	44	17	7	29		53	112	1	8			3121	
30.2.051	9.28	F5	29.3	0.63	28	34	84	19	17	8	17		42	95	31	13	39	48	9979	
30.2.055	12.57	F5	31.0	0.95	31	34	89	29	15	16	21		41	113					1110	
30.2.057	12.28	DGK0						35	45	18	45		75	154					2010	
30.2.060	11.82	DG8					98	58	33	8	31		55	111	36	13			3120	
30.2.069	12.07	DGK0					160	42	48	16	38		91						4140	
30.2.073	11.60	DG0					76	34	23	4	22		50	99	19	8	38	56	5353	
30.2.086	12.88	DK5					125	64	69	12	39	37	114	200	-1	9			4141	
30.2.088	13.05	DG8					121	52	33	4	35		65	205					3120	
30.2.089	11.24	F5(A)	15.3	0.54	15	16	33	8	9	10			45	90	24	18	34	53	9768	
30.2.090	13.87	DG0					95	37	21	2	39		57	122					2120	
30.2.091	14.09	DG5					100	57	25	10	62		50	103	24	-11			2120	
30.2.097	14.77	DG8						57	34	-3	52		51	88					1010	
30.2.107	12.04	DG5					103	41	27	6	26		57	120	18	19	64	47	8382	
30.2.108	12.95	F8	30.6	1.77	26	40	106	54	26	6	39		50	113	19	11	41	34	5142	
30.2.110	12.16	DG5					100	46	27	7	29		57	109	22	-1	57	55	8373	
30.2.115	12.42	DGG8					141	50	38	18	33		79	157	21	17	35	41	8281	A
30.2.122	13.63	DG0					71	45	24	5	17		41	89	22	12	9		3231	
30.2.125	13.44	DGG0					103	45	27	11	26		55	112	21	10	35	17	3121	C
30.2.129	12.56	F5	39.3	0.87	41	45	98	34	14	12	23		47	99	24	11	34	51	7272	
30.2.134	12.66	DGG0					99	45	22	11	29		55	121	27	-2	51	68	8382	
30.2.136	13.84	DG5					117	41	25	7	24		48	156	10	-10			2120	
30.2.150	11.63	F5	35.3	0.50	36	39	72	18	12	8	21		43	100	30	22	31	55	9945	
30.2.152	13.91	DGG8					103	55	37	18	40		60	146	14	14			3110	
30.2.154	10.79	DG5					101	45	27	7	32		59	121	24	6	52	48	9498	
30.2.156	13.13	GK2					107	61	49	30	40		87	183	20				4141	
30.2.165	13.40	DK0					111	53	39	-2	33		59						2110	
30.2.166	12.11	F8	24.5	1.49	22	27	87	37	18	7	25		46	99	27	16	35	33	5254	

NO	m_{4400}	SP	H_γ	G/H_γ	H_γ	H_δ	K	G	g	c	4385	4227	C_1	C_3	U_1	U_2	U_3	U_4	W	REM.
30.2.173	12.45	GKO					128	57	43	33	41		89	189	5	-4			6262	
30.2.176	12.15	F5	31.2	0.76	35	27	79	24	9	6	17		33	84	23	18	36	61	6434	
30.2.177	13.92	DG8						51	31	6	36		66	83					1010	
30.2.178	12.64	DG5					101	46	28	9	29		53	109	11	3	20	77	7352	
30.2.179	13.43	DGO					99	59	24	10	23		59						2110	
30.2.182	12.48	F5	29.3	0.93	29	29	71	27	11	7	19		39	94	24	15	28	17	8762	
30.2.183	12.52	DGG5					131	47	31	13	31		60	121					7462	C
30.2.187	14.42	GK2						79	52	42	60	29	117						1010	
30.2.194	10.92	F5	26.7	0.88	26	27	80	24	13	10	15		42	100	30	10	36	31	9856	
30.2.202	13.11	F5	30.5	0.85	28	36	76	26	9	12	20		42	99	42	-12	34	67	4332	
30.3.026	11.22	DGO	22.4	1.58	22	23	90	35	16	7	20		47	115	13	17	48		2121	
30.3.029	12.14	DKO						44	35	3	35		62	156					2020	
30.3.033	12.51	DG8						65	31	5	44		65	138					1010	
30.3.034	12.74	F5	35.8	1.09	54	18		39	19	-2	26		46						1010	
30.3.037	10.55	DG5					92	45	26	7	31		60	116	28	-5	55	52	2323	
30.3.038	12.85	DKO						32	41	2	40		65						1010	
30.3.042	12.65	F8	36.8	1.44	44	31		53	20	18	45		56						1010	
30.3.057	13.07	GGO							28	21	48		68						1010	
30.3.058	12.22	F5	30.3	0.74	26	39	71	22	5	9	18		41	98	26	19			2220	
30.3.062	8.02	DK2					129	66	49	7	36	22	86	155	18	-4	57	74	8889	
30.3.091	12.56	GKO					118	57	40	31	36		75	167	24	-8			4121	
30.3.092	14.16	DG5						57	27	7	34		49	124					1010	
30.3.093	14.53	DGG8						48	37	11	20		79						1010	
30.3.096	13.81	DG5						38	28	4	40		50	120					1010	
30.3.097	14.47	DKO						107	36	10	40		68	123					1010	
30.3.099	13.93	DK2						78	53	15	37		90						1010	
30.3.100	12.82	F8	24.7	1.62	31	19	126	40	17	4	29		52	119	28	-9			1111	
30.3.101	11.96	F8	33.2	1.03	36	32	92	34	15	14	26		48	97	24	14	36		4332	
30.3.105	13.41	GGO					133	44	28	15	45		53	97	44	12			2121	
30.3.106	14.49	DGO						35	21	8	14		55						1010	
30.3.110	10.13	F5	30.9	0.95	33	29	85	29	17	7	17		45	96	25	18	41	52	9998	
30.3.112	12.97	DGO					96	50	18	8	21		51	122	11	-8	57	45	3231	
30.3.119	13.95	GGO					82	40	25	16	35		60						1110	
30.3.122	13.95	GGO					121	44	20	14	28		47	109	57	-4			1010	
30.3.125	11.33	F5	28.2	0.88	26	32	77	25	14	3	18		39	91	27	13	40	44	9996	
30.3.127	14.61	DGO						64	21	6	39		50	91					1010	
30.3.128	9.98	GKO					127	55	41	27	37		88	176	11	6	88	41	9996	
30.3.130	14.00	DG8						62	31	5	50		63	117	44				1010	
30.3.131	10.01	F5	28.9	0.94	29	28	97	27	15	7	20		46	109	27	15	44	56	9999	
30.3.134	13.66	F8	38.3	1.60	34	54	97	61	10	15	19		44	110	51	-18			1110	
30.3.137	12.30	F8	24.6	1.15	26	23	73	28	9	13	21		38	73	25	11	29	24	7383	
30.3.144	12.66	DGO					85	33	17	9	31		46	96	33	8	39	27	5251	
30.3.149	14.34	DG5						40	25	4	47		55						1010	
30.3.151	14.31	DG5						87	29	7	35		46	123	9				1010	
30.3.154	12.40	DGG8					121	61	31	10	34		58	116	18	9	65	63	5252	
30.3.157	14.21	GK2						52	49	33	36		75						1010	
30.3.158	13.55	DKO						54	42	9	43		66	136					2010	
30.3.159	13.27	DG5					111	52	29	10	37		54	114					3120	
30.3.169	12.63	DGO					98	33	23	4	23		47	88	19	15			4242	
30.3.176	14.10	F8	43.6	1.11	43	57	91	48	13	15	26		40	89	24	12			2111	
30.3.177	14.14	DGO					89	45	17	7	17		41	102					1010	
30.3.179	13.18	F5(A)	32.8	0.50	31	40	41	16	10	15	7		38	99	16	16			2211	
30.3.182	12.48	F8	28.4	1.24	27	31	85	35	17	8	23		50	101	12	3	33		5242	
30.3.186	12.02	DK2					123	53	57	8	43	22	88	166	19	-9	79		7273	
30.3.192	12.31	DGO	21.8	1.57	18	25	85	34	17	10	25		47	98	23	2	38	44	7262	
30.3.196	11.65	DG5					96	50	25	8	29		53	107	19	7	48	48	7573	
30.3.200	11.29	F8	27.3	1.16	28	26	105	32	15	11	21		55	128					6360	C
30.3.202	13.41	F8	32.0	1.25	35	29	94	40	22	13	32		50	123	32				2110	
30.3.203	12.59	DGO	23.4	1.71	19	27	93	40	15	7	26		43	101	8	16	32		5152	
30.3.205	14.38	DKO						78	40	3	26		50						1010	
30.3.211	14.26	GGO						25	19	16	24		50	100	37				1010	
30.3.217	14.26	DK2						79	51	14	24	21	94						1010	
30.3.232	13.14	F8	24.0	1.62	26	22	99	39	19	6	29		48	105	24	5			2120	
30.3.233	13.52	DGO					89	24	20	7	21		44	120	23	5			1111	
30.3.244	11.67	F5	25.1	0.84	24	26	92	21	9	11	20		42	99	28	18	23	49	4442	
30.3.246	12.80	F2(A)	28.2	0.42	26	32	41	12					26	56	30				1111	
30.4.023	11.74	F8	26.3	1.03	33	20	86	27	15	7	18		50	107	12	6	68		2121	
30.4.037	12.82	F8	35.0	1.41	35	40		50	22	2	36		38	73					0000	
30.4.042	12.93	GGO						71	24	16	59		51						1000	
30.4.045	11.19	F2	29.3	0.48	28	32	55	14	7	13	20		36	96	41	11	49	58	3322	
30.4.050	12.62	DG8						58	31	3	35		53						1010	
30.4.058	11.03	F5	38.0	0.71	42	39	86	27	7	7	19		46	114	20	27	43	54	5432	
30.4.061	12.64	F8	26.7	1.81	25	28		48	24	5	33		50	126					1110	
30.4.067	12.14	F5	22.3	0.90	18	26	70	20	10	2	14		39	84	31	11	36	24	4332	
30.4.069	13.93	F8	21.8	1.24	18	25	76	27	17	6	18		53	100	31				1110	
30.4.070	12.62	F8	27.8	1.48	27	28	88	41	14	7	26		39	96	9	-2	49	44	3231	
30.4.073	13.44	GGO					167	48	28	16	40		52	136	25	15	33		1110	
30.4.076	13.58	DKO					107	45	35	1	24		54	148					1110	
30.4.079	12.46	F5	30.4	0.89	31	32	83	27	19	-1	22		38	107	13	9	39		3121	C
30.4.080	10.66	F5	36.4	0.81	38	39	98	29	16	12	19		51	114	26	9	48	36	6563	
30.4.081	9.51	GK5					159	59	62	30	40	22	117	237	15	1	80	74	7272	
30.4.087	11.19	F8	26.2	1.21	28	24	93	32	17	12	22		51	114	23	6	38	48	9397	
30.4.088	13.15	GK5					103	74	71	17	48	37	92	224					3120	
30.4.091	12.83	F8	27.9	1.10	29	26	108	31	10	7	20		41	107	19	29	38	85	4141	
30.4.092	13.45	F8	30.9	1.18	33	29	92	37	22	13	24		51	103	52	21			1111	
30.4.097	9.93	F8	27.3	1.08	26	28	87	29	19	5	20		46	102	23	10	42	56	9999	
30.4.099	14.24	DKO						60	38	5	47		63						1010	
30.4.101	12.15	DG5					77	45	25	9	31		49	79	5	2	26		7171	
30.4.103	14.32	GGO						44	24	14	71		69	130					1010	
30.4.106	14.56	GGO							28	18	44		65						1000	
30.4.109	14.05	DKO						64	40	4	48		68	116	27				1010	
30.4.114	12.14	GGO					93	44	22	12	32		57	123	29	-11	63	55	8283	
30.4.118	14.56	DG8						66	31	2	70		71						1010	
30.4.120	14.35	GG8						72	38	32	53		72						1010	
30.4.123	13.69	DG5					121	52	28	9	38		61	127	11	15			1010	
30.4.128	9.02	F5	30.1	0.86	31	31	84	26	12	11	20		47	104	26	14	42	57	9999	
30.4.131	14.19	DGG8						45	34	12	40		62	133	14				1010	
30.4.137	11.28	F8	26.1	1.35	24	28	95	35	21	6	24		51	118	20	9	47	26	7463	D
30.4.140	8.49	F5	28.9	0.94	31	27	89	27	16	6	19		49	112	28	11	39	54	9999	
30.4.144	14.44	F5	44.2	0.75	45	55		33					50						1110	

NO	m_{4400}	SP	H_γ	G/H_γ	H_γ	H_δ	K	G	g	c	4385	4227	C_1	C_3	U_1	U_2	U_3	U_4	W	REM.
30.4.154	13.55	DG0					119	45	24	4	35		50	113	34	8			2121	
30.4.162	14.51	DK2							54	9	46		78						1010	
30.4.165	14.03	F5	32.4	0.98	34	33	90	32	11	9	24		40	97	29				1110	
30.4.179	10.51	F8	27.3	1.16	31	24	93	32	21	4	18		48	109	29	8	43	56	9496	
30.4.181	12.92	DG5					105	58	28	-1	30		48	117	19	11	69	1	3121	
30.4.188	13.74	DG8					129	72	31	10	34		59	129	33	8			1010	
30.4.191	12.91	DG0	23.0	2.05	27	19	99	47	21	9	29		45	95	29	-1	41	31	2121	A
30.4.192	12.46	DG0					110	48	21	4	31		46	96	39	-5	55	71	3442	
30.4.194	11.68	F8	29.8	1.03	31	29	84	31	17	6	22		43	88	24	21	42	52	6363	
30.4.196	14.26	DG8						48	32	-3	46		50	111	28	-19			1010	
30.4.203	12.91	DG5					101	57	28	4	30		50	120	5	19	66	37	2321	
30.4.204	14.43	GG0						39	21	11	43		53	121					1010	
30.4.212	14.21	F8	38.5	1.07	45	35	94	41	13	14	22		37	79					1110	
30.4.213	13.92	DG5					104	51	28	3	33		53	134					1010	
30.4.215	13.31	F2	24.6	0.38	19	31	62	9					45	103	32	33	24		2211	
30.4.221	10.14	DK0					113	59	38	11	35		73	145	16	3	57	64	6984	
30.4.226	12.24	DK0					91	57	42	10	39		61	120					4130	
30.5.016	11.98	DG0						50	21	8	26		52	110					1010	
30.5.025	12.52	F8	27.9	1.06	29	26	96	29	19	2	29		44	132	-34	0	26		1110	
30.5.026	10.38	DK0					104	51	39	5	38	12	75	135	22	-3	56	66	1222	
30.5.037	10.89	F5	31.0	0.68	32	32	81	21	10	7	13		42	102	33	2	33	48	3312	
30.5.039	11.86	F5	23.7	0.64	17	32	71	15	17	1	18		38	85	9	21	30		2211	
30.5.042	11.95	GG8						55	37	28	36		76	185					2020	
30.5.045	12.63	DK2						79	57	-3	55		68						1010	
30.5.047	12.22	F5	22.9	0.98	21	25	68	22	10	7	20		40	95	15	0			2221	
30.5.054	11.03	F8	23.5	1.10	25	22	91	26	13	7	17		45	107	22	13	38	36	2212	
30.5.061	11.55	DG0	23.0	1.79	29	17	89	41	21	8	30		54	102	12	26	36	26	3131	
30.5.066	12.46	F8	35.6	1.13	35	42		40	20	3	26		48	115					1110	
30.5.080	12.78	DG0					115	35	22	3	17		35	86					1010	
30.5.082	12.68	F5	45.0	0.86	45	58		39	13	2	31		34	103					1110	
30.5.084	13.11	GG5							31	20	59		59						1000	
30.5.090	12.63	F8	32.7	1.12	32	38	75	37	14	7	23		38	109	19	11	46	59	3231	
30.5.092	11.32	DG5					96	45	29	-1	30		59	121	18	3	49	54	5153	
30.5.094	14.23	DG5						91	29	8	38		54						1010	
30.5.104	12.66	DG0	21.7	2.55	15	28	136	55	24	5	30		54	122	30	0	57		4141	
30.5.105	13.47	DK2					122	62	44	4	46		72	150	17	26			1011	
30.5.107	13.54	F8	32.3	1.24	38	26	105	40	15	7	24		51	95	17	30			1111	
30.5.108	9.62	F5	29.3	0.56	29	29	70	16	10	6	14		40	98	30	19	36	54	9979	
30.5.114	13.63	DG5					126	66	29	2	24		59	141	-22	0			1010	
30.5.116	13.43	DG5					134	65	25	3	32		55	122	23	-6	72		1011	
30.5.117	13.11	F8	31.9	1.63	31	37	125	52	26	9	37		55	99	12	1	56		3131	
30.5.118	11.79	GK5					211	58	61	29	38	25	116	206	14	35	67		7161	
30.5.119	14.30	DK2						66	44	-1	39	25	66						1010	
30.5.121	11.18	F8	30.0	1.29	32	28	86	39	24	4	25		51	109	18	7	35	51	9595	
30.5.123	13.81	DG0					106	55	19	7	39		58	104	34	-2			1011	
30.5.125	12.88	GK0					137	66	39	27	40		77	172	-6	6			4141	
30.5.129	10.84	F5	31.3	0.75	32	33	74	24	14	6	17		45	100	21	16	31	48	9984	
30.5.131	13.06	DG8					137	41	33	1	35		63	129	34	1			1111	
30.5.141	10.52	GK2					141	60	57	35	41		108	228	6	4	86	50	9493	
30.5.144	12.81	DG5					122	54	29	7	38		56	120	9	3	73		4242	
30.5.145	11.65	F5	31.6	0.63	32	34	74	20	8	9	20		39	101	21	17	32	50	8843	
30.5.150	14.37	F8	40.8	1.21	38	55	108	50	18	35	44		60	97					1110	
30.5.165	11.25	F8	25.1	1.55	23	27	94	39	23	7	25		54	109	22	12	44	44	9395	
30.5.167	12.21	F8	27.3	1.25	29	25	82	34	15	13	23		43	86	17	13	30	26	7362	
30.5.169	13.06	DG5					90	61	25	5	30		44	75	15	4	67	53	3130	
30.5.171	12.32	DG0					109	42	20	5	31		50	114	28	10	27	56	5252	
30.5.172	14.48	F8	44.0	1.04	49	47		46	20	5			58	92					1110	
30.5.173	14.05	DG0					101	20	17	9	32		58	124	40	-16			1010	
30.5.177	13.00	GK2						57	58	38	40		95	212					2020	
30.5.179	11.89	F8	27.4	1.16	34	21	91	32	20	9	25		49	109	11	16	41	39	6162	
30.5.182	11.43	F8	24.6	1.49	19	31	95	37	24	12	23		53	104	23	7	31	85	9183	
30.5.189	12.43	DG0					116	45	20	8	30		45	92	10	7	36	62	4242	
30.5.190	12.93	DG0	22.3	2.17	16	28	92	48	14	10	25		41	96	16	10	39	34	3131	
30.5.194	12.07	DGG0					93	42	26	13	26		61	135	34	-12	75	42	6351	
30.5.198	13.41	DG8					108	52	30	2	19		61	131	28	20	12		2121	
30.5.199	13.98	DK2						67	43	9	45		69	149	-4	22			1010	
30.5.208	13.03	DG5					107	55	27	7	34		43	111	10	8	22	58	3231	
30.5.209	13.37	DG0					152	39	19	8	40		52	123	19	-3			2021	
30.5.219	14.28	DG0						40	17	2	29		52	97	40				1010	
30.5.223	12.19	DG5					91	45	29	5	33		63	103	14	6			3240	
30.5.224	12.89	DG5					124	50	25	2	37		68	122	11	20	40		2221	
30.5.235	13.36	F8	32.6	1.44	26	48	108	47	22	14	32		47	89	36	12			2121	
30.5.246	11.74	F2	30.7	0.46	32	31	70	14					44	96	40	0	45	50	4342	

NO	m_{4400}	SP	H_γ	G/H_γ	H_γ	H_δ	K	G	g	c	4385	4227	C_1	C_3	U_1	U_2	U_3	U_4	W	REM.
PE 5	9.92	DGK0					151	51	44	23	26		83	184	13	1	76	49	1221	
PE 7	10.30	GG0	20.2	2.10	18	22	113	42	21	11	17		51	117	18	10	61	46	2222	
PE 10	10.75	GK2					148	59	56	48	39		96	228	-5	7	57		3231	
PE 11	10.25	DG0					77	28	21	9	19		55	112	18				1111	C
PE 12	9.62	DG0					77	33	12	6			59	109	15	4	52	70	0101	
PE 13	10.22	F8	23.4	1.31	22	25	110	31	19	7	18		50	113	24	8	52	63	2223	
PE 17	10.68	F5	30.1	0.70	29	33	82	21	12	12	11		44	109	31	25	37	51	3332	
PE 19	9.90	GG8					155	52	37	32	28		81	183	3	17	90	53	1222	
PE 20	10.75	DGG8					129	42	35	18	29		75						1110	
PE 22	12.96	DG0						39	11	9	31		37	116					1010	
PE 25	11.34	DGK0					114	51	39	12	39		74	132	34	10	37	38	1111	
PE 29	12.21	F8	27.8	1.86	28	27	89	52	19	10	29		45	89					1110	
PE 30	10.23	F0	30.7		35	34	61						38	100	28	6	57	58	1111	
PE 32	9.51	GK2					153	53	57	43	35		114	233	13	4	112	56	1211	
PE 35	9.26	F5	31.5	0.82	34	29	75	26					50	85	36	13	49	50	0103	
PE 37	12.69	F2	20.7	0.34	18	23	99	7					51	153					1110	
PE 38	11.09	DK2					108	59	43	9	46		76	169	12	-11	48	81	3231	
PE 41	9.66	GK0					144	50	43	35	31		91	198	9	9			1212	
PE 43	11.57	DGK0					90	52	41	22	38		76	152	10	-14	55	24	2221	
PE 44	9.34	F8	22.4	1.42	26	19	97	32	24	3			45	108	24	13	51	54	0001	
PE 46	10.52	F8	24.0	1.13	25	23	100	27	15	7	17		48	105	40	2	39	51	1211	
PE 47	10.35	F2	20.2	0.47	18	22	66	9					43	95	39	10	35	60	1102	
PE 49	10.66	F5	27.3	0.95	29	25	111	26	22	15	18		56	111					3330	A
PE 51	9.66	DG5					105	46	29	5	26		63	112	34	7	52	83	1212	
PE 52	10.95	DG0	23.0	1.64	27	19	86	38	17	6	17		45	102	36	12	40	47	2222	
PE 57	10.56	GK0					141	50	39	30	31		87	177	14	12	95	57	3331	
PE 58	11.16	DGG0					121	42	26	11	30		60	157	15	19	65	20	2221	
PE 63	11.29	F5	28.4	0.91	28	28	85	26	13	8	16		42	102	26	17	22	50	3322	
PE 67	12.72	DGG0						61	27	10	35		58	100					2020	
PE 71	10.76	DG0	23.5	1.56	24	23	103	37	18	8	19		45	102	27	15	37	49	3443	
PE 73	10.87	DG5					102	34	26	6	24		54	121	30	8	47	45	2222	
PE 76	11.71	DGK2					117	54	49	23	41		90	188					2120	
PE 77	9.79	F8	19.7	1.44	21	19	89	28	18	6	20		48	107	25	17	43	47	1114	
PE 79	11.62	DK5					123	62	66	11	46	24	100	200					3130	
PE 82	10.44	DG5	17.5	2.16	18	17	89	38	25	6	25		53	106	37	-2	45	69	1112	
PE 83	11.53	GK5						65	84	42	46	29	153	230					2020	
PE 87	10.57	F8	28.4	1.62	28	28	95	46	19	8	25		48	105	26	11	37	52	2222	C
PE 88	11.18	F8	22.9	1.29	22	24	91	29	16	2	21		45	106	26	20	33	51	3332	
PE 90	10.96	DK2					131	59	51	15	43	19	88	184	-2	4	59		5453	
PE 92	10.20	DG8					127	45	34	8	31		64	140	26	15	55	71	1112	
PE 93	10.75	DG5					119	45	26	9	26		57	131	17	6	59	52	4444	
PE 96	10.86	DGG8					134	48	36	20	34		83	161	22	20	48		3232	
PE 97	11.21	F5	28.7	0.98	28	29	99	28	15	11	24		43	99	21	19	31	49	4443	
PE 98	10.60	F8	22.4	1.31	24	21	101	29	14	11	21		47	103	39	10	38	59	1112	
PE 102	10.60	DGG5					123	50	32	10	25		68	142	18	8	58	50	4443	
PE 104	11.08	GK0					145	60	45	28	38		84	190	19	-3			2221	
PE 105	9.41	B5	16.9	0.97	16	18	95	16					53	111	25	12	41	61	0002	
PE 106	10.98	F8	27.8	1.31	28	27	103	37	26	7	24		56	122	17	7	50	51	4154	
PE 107	11.41	F5	29.5	0.76	31	28	86	22	12	12	16		46	115	28	33	24		2211	
PE 110	9.31	F0	29.2		28	38	62						45	111	44	16	38	57	0002	
PE 111	10.67	GK5					151	55	65	48	52	22	116	224	34	-25	92		5363	
PE 115	9.73	F8	28.4	1.08	28	28	95	31	14	6	16		44	94	31	10	42	51	5668	
PE 117	11.24	F8	24.1	1.91	27	21	119	46	21	12	38		51	123	31	3	45	48	3132	
PE 119	10.96	DGG8					138	65	37	20	40		74	166	9	8	38	71	8474	
PE 121	10.26	GG8					134	51	35	22	30		75	159	22	7	64	37	8786	
PE 122	11.02	F8	21.4	1.43	25	18	82	31	18	7	23		48	101	17	19	48	38	7263	
PE 125	11.01	DGG5					148	66	31	13	32		74	144	34	9	50	36	4241	
PE 127	10.25	F5	33.3	0.60	34	36	85	20					33	92	31	12	43	51	4434	
PE 128	11.30	F8	23.6	2.15	32	16	110	51	21	7	30		56	118	18	16	46	43	4232	
PE 131	9.41	F8	25.7	1.19	28	23	102	31	15	6	20		46	93	26	12	44	52	9799	
PE 133	10.69	GG8					131	60	38	24	44		79	161	15	9	54	24	8272	
PE 140	10.45	GK0					143	57	43	29	37		81	180	13	2	86	49	9694	
PE 141	9.60	GK5					165	61	59	34	39	21	116	245	20	-9	96		9494	
PE 143	12.40	F8	33.0	1.04	33	37	93	34	5	13	24		43	87	64				3220	
PE 144	9.66	DG0					123	44	28	5	26		53	109	16	9	44	57	8158	
PE 146	10.68	DG0					123	44	24	5	37		57	121	26	3	51	48	4342	
PE 148	11.12	GG8					161	57	38	52	35		94	200	5	4	72		4141	
PE 149	8.14	F5	37.6	0.66	36	48	85	25	7	13	10		38	101	39	17	43	52	9939	
PE 152	10.37	F8	26.3	1.21	32	21	64	32	18	4	18		49						5240	C
PE 153	10.5'	DGG8					142	54	37	17	36		73	148	28	16	41	56	9694	
PE 156	11.16	DG5					99	47	27	5	28		58	127	20	10	20	59	4241	
PE 157	9.64	GG0					121	51	26	15	29		61	129	12	7	62	49	8785	
PE 158	10.34	F8	31.0	1.33	31	34	108	41	19	7	24		47	101	25	9	49	51	8776	
PE 159	9.46	F8	27.8	1.23	28	27	116	34	18	8	26		48	102	20	8	49	62	8779	
PE 160	11.34	DGK0					122	60	40	18	37		74	150	21	10	65		8484	
PE 161	11.35	DG8					109	45	32	4	33		61	111	34	2	73		5241	
PE 162	12.68	DG0					144	61	15	5	25		47	89					2120	
PE 167	11.64	GK0					130	54	39	30	47		75	176	-4	8			7261	
PE 168	10.37	GG8					134	53	36	43	41		88	184	-6	14	89	14	4443	
PE 171	7.55	GK5					136	62	93	32	49	34	161	259	27	3	68	106	4354	
PE 172	11.47	DG8					123	57	33	4	37		64	131	10	14	68		5252	
PE 177	11.98	GK2						61	56	40	43	25	121	195					3030	
PE 178	10.29	B9	55.2		54	69							16	77	58	15	24	43	9999	
PE 179	10.84	DGG5					121	51	30	16	34		61	131	22	21	44	53	8584	
PE 180	11.04	F8	25.1	1.27	24	26	96	32	18	7	22		50	113	28	13	35	61	9585	
PE 182	10.60	DG0					95	37	18	7	21		49	103					4432	C
PE 184	11.19	GK2					134	66	54	51	40		104	225					5040	
PE 187	10.11	GK0					148	60	40	23	36		85	176	6	5	75	64	8884	
PE 189	11.91	GK5						64	61	43	45	29	113	226	-11				6061	
PE 192	10.60	GK5					133	70	64	33	47	16	108	212	17	-5	115	59	8383	
PE 195	12.92	DGK0						85	40	20	48		86						1010	
PE 200	12.00	GK5						71	72	40	51	39	120	228					5040	C
PE 203	9.78	F5	29.3	0.76	29	29	81	22	9	4	13		42	100	24	10	55	42	9935	
PE 204	11.41	DGK0						55	42	23	29		85	172					3030	
PE 205	10.41	GK5					147	64	67	45	45	27	131	243	18	14			4141	
PE 209	11.05	F5	32.9	0.93	36	31	103	31	19	9	19		49	102	18	23	47	43	4342	
PE 211	12.44	DG5					133	46	27	8	38		54	120	13	-16			5152	
PE 214	9.29	GK5					156	54	51	37	46	18	107	205	5	5	102	79	4243	
PE 218	10.62	F5	37.5	0.60	41	39	87	22	11	8	17		40	103	31	18	46	49	9976	
PE 219	10.02	F5	31.3	0.90	41	22	100	28	10	9	15		45	96	28	15	55	55	2222	

NO	m_{4400}	SP	H_τ	G/H_τ	H_γ	H_δ	K	G	g	c	4385	4227	C_1	C_3	U_1	U_2	U_3	U_4	W	REM.
PE 226	11.18	DG0	21.8	1.62	22	22	98	35	20	10	24		52	104	32	18	31	46	9495	
PE 227	12.45	DGG5					99	52	33	13	36		61	141	13	7	40	72	8372	
PE 228	11.09	DGK0					145	55	43	21	36		82	177	26	-1	99	11	7361	
PE 230	11.27	DG5					103	50	27	8	32		57	106	26	0	33	57	9584	
PE 234	9.70	F2	43.3	0.43	44	54	57	19					33	99	37	20	30	55	9959	
PE 235	11.37	GG8					129	54	38	34	36		89	191	2	11	103	30	5352	
PE 236	11.10	F8	26.2	1.53	25	27	96	40	22	5	24		48	101	31	5	41	67	9898	
PE 237	10.20	DG0					121	47	23	8	30		54	112	22	12	41	47	9198	
PE 240	10.96	A2	66.1		68	78	55						30	121	63	16	38	28	2211	
PE 241	8.60	GK5					164	61	72	37	43	28	136	258	22	-11	100	72	9994	
PE 242	12.61	DG0					68	39	22	9	32		53	108	34	18	38		5353	
PE 244	9.68	DGG0					109	48	27	11	28		58	125	17	6	70	51	9499	
PE 246	10.32	F8	26.2	1.48	27	25	98	39	21	9	25		52	111	21	8	47	49	9599	
PE 248	10.33	F5	31.5	0.63	33	32	90	20	10	10	20		38	96	32	16	38	43	9939	
PE 250	11.14	GG8					135	61	36	22	39		77	157	22	-2	66	28	9473	
PE 252	10.40	F8	28.9	1.34	31	27	110	39	18	10	21		49	108	28	-3	53	56	3333	
PE 255	10.40	DG0					113	44	22	6	29		49	122	22	15	44	63	7475	
PE 256	11.71	GK0					130	59	44	25	38	16	84	148	14	8	108	56	4271	
PE 257	11.61	F8	27.3	1.17	26	28	96	32	25	10	29		54	103	25	5	73	39	5362	A
PE 258	10.56	GK5					152	66	63	35	45	23	123	239	25	-2	76	55	6362	
PE 259	10.56	F5	31.8	0.70	34	31	75	22	10	8	16		40	97	26	12	41	50	9998	
PE 260	11.34	F5	30.4	0.97	32	29	84	29	13	6	21		46	98	26	6	31	47	8644	
PE 261	10.13	GK0					141	59	45	41	39		91	198	5	3	93	29	9998	
PE 263	10.87	F8	30.4	1.28	32	29	89	39	23	6	18		49	95	33	16	34	55	6664	
PE 266	10.27	F8	28.4	1.41	31	26	104	40	20	10	23		49	103	31	17	36	55	9998	
PE 267	11.02	F8	26.7	1.46	25	28	96	39	20	8	28		54	108	27	11	34	63	9394	
PE 268	8.79	GK5					159	70	68	40	45	23	129	241	19	-3	83	62	9496	
PE 269	10.54	GK5					94	38	59	21	32	29	117	207	45	2	33	82	6362	
PE 270	9.91	F5	28.5	0.62	26	33	73	18	9	8	16		38	96	31	15	41	54	9999	
PE 271	10.70	GK2					133	71	53	45	43	30	99	198	2	13	49	81	8483	
PE 272	11.66	GK0					123	51	41	34	36		85	157	18	5			4131	
PE 274	10.95	F5	36.0	0.69	41	34	69	25					47	104	34	21	47	55	4445	C
PE 279	10.32	GK0					106	53	40	28	36		85	180	6	7	84	42	9995	
PE 280	9.00	F5	31.8	0.85	33	33	87	27	13	9	18		45	99	27	13	40	54	9999	
PE 282	10.59	F5	31.6	0.63	31	36	80	20	6	10	16		39	93	35	20	31	46	9928	
PE 283	10.99	F5	30.7	0.73	31	33	73	22	8	7	17		38	93	23	14	32	40	9986	
PE 285	10.41	GK0					129	55	46	27	40		90	187	10	-1	72		9594	
PE 288	5.24	A2	69.7		73	81	32						26	108	52	17	37	47	9999	
PE 289	10.48	F0	45.0		47	53	63						32	101	40	13	40	25	9919	
PE 290	11.37	GK0					143	64	48	26	48	22	91	182	4	9			5243	
PE 292	10.29	F5	31.7	0.97	35	28	89	31	10	11	29		39	92	34	14	45	51	6465	
PE 295	10.27	GG0					117	47	26	17	25		67	143	19	4	74	61	8485	
PE 297	10.86	DG5					116	54	29	7	35		55	112	25	5	54	62	6465	
PE 300	10.27	GK5					148	70	67	28	35	23	141	256	28	8	60	93	4252	
PE 301	9.71	F5	34.7	0.51	36	37	76	18					41	92	31	12	38	49	9999	
PE 302	8.70	GG0					72	13	15	14	18		60	118	19	26	45	62	9998	R
PE 304	10.55	F5	31.6	0.63	31	36	97	20	11	9	10		44	95	35	12	27	42	5534	
PE 306	8.63	GK5					192	61	70	34	41	21	136	264	14	-8	79	83	9597	
PE 307	11.18	DG5					104	45	26	7	28		54	114	25	10	44	58	9697	
PE 308	13.32	F5	32.8	0.72	39	42	48	24	21	12	24		51	120					2110	
PE 310	10.89	DK0					118	57	35	9	35		64	135	22	8	69	38	9793	
PE 312	9.44	DG0	22.9	1.69	24	22	126	39	21	5	21		53	108	22	13	46	50	9999	
PE 313	11.01	F8	35.0	1.04	36	38	102	37	19	13	25		49	105	31	16	38	45	7663	
PE 314	10.65	GK0					137	55	41	24	37		78	167	13	6	96	72	6263	
PE 319	9.63	F2(A)	47.5	0.35	51	57	47	16					35	106	42	13	38	45	9846	
PE 320	12.83	DGG0					97	46	27	10	37		58	113	32	16			6252	
PE 323	11.09	F8	31.4	1.28	27	41	83	40	18	7	28		45	102	18	8	37	51	7564	
PE 325	11.34	DG0	20.2	2.04	23	18	90	41	23	9	26		54	115	21	20	44	73	9185	
PE 328	12.51	GG0					136	57	23	27	37		60	125	4	5	29		5152	
PE 330	11.19	F5	28.7	0.90	27	32	99	26	14	6	18		46	104	28	11	42	57	9663	
PE 331	10.45	F5	36.7	0.54	37	42	77	20	10	9	21		40	103	27	9	33	46	9946	
PE 333	10.77	DK0					122	54	35	9	34		62	139	30	4	66	51	9795	
PE 336	11.27	GK0					137	54	40	34	36		84	186	22	1	97	38	4342	
PE 337	8.94	GK2					161	55	58	34	37	17	114	232	5	1	81	66	9998	
PE 338	11.65	GK0					133	54	42	24	38		84	166	30	5	109	48	4243	
PE 339	8.23	F2	39.8	0.32	43	43	75	13					38	107	37	11	38	58	9978	
PE 340	12.34	DG8					117	57	31	9	29		64	130	11	10	71	52	7372	
PE 341	11.27	DGK0					122	57	43	21	36		81	179	7	5	77	76	4342	
PE 342	10.79	GK0					132	57	40	23	38		82	153	28	-2	42	56	9394	
PE 343	9.39	F8	27.6	1.28	26	29	115	35	21	8	23		54	115	22	15	49	56	9698	
PE 344	12.67	F8	24.6	1.77	25	24	74	44	14	12	34		38	81	1	15			2121	
PE 345	8.26	A2	68.2		71	80	39						25	114	42	15	37	47	9998	
PE 347	10.01	F5	29.9	0.55	29	32	75	16	8	10	11		41	97	36	15	45	52	6635	
PE 348	12.40	F5	30.9	0.72	33	29	87	22	6	13	21		40	103	16	7	64		4322	
PE 349	8.86	GK0					159	59	42	48	34		88	188	4	-2	108	58	9996	
PE 350	11.02	DG0	21.9	1.93	27	17	98	42	22	6	20		52	100	28	20	36	41	4132	
PE 351	11.08	DGG8					128	58	36	12	37		71	160	11	10	71	55	9797	
PE 352	11.45	GK0					125	61	40	30	38		75	167	-3	11	80	55	9302	
PE 355	10.29	GK2					150	65	53	45	44	24	106	206	12	-2	70		9493	
PE 356	10.35	GK0					143	62	47	29	41		89	194	13	0	70	26	9695	
PE 357	11.07	F5	27.9	0.89	29	26	91	25	14	10	20		43	104	32	9	42	57	9998	
PE 360	11.14	F5	50.3	0.94	57	55	111	47	21	5	20		53	118	18	-2	54	63	3231	
PE 364	10.54	F8	31.6	1.19	31	36	103	38	15	12	24		44	100	24	11	35	33	9996	
PE 365	11.00	F5	33.3	0.85	32	40	84	28	13	7	19		41	93	25	0	42	51	9754	
PE 366	13.12	A3	54.1		52	69	35						28	108	50	29	48	17	3311	
PE 369	11.00	F8	31.7	1.15	35	28	95	37	15	10	24		45	100	27	10	38	53	9763	
PE 371	11.67	DK5						53	78	7	46	65	106						4020	
PE 372	13.82	DG0					97	51	22	5	25		48	101	25	26			2121	
PE 373	12.65	GK0					140	53	42	33	43		92	201					3130	
PE 375	9.99	DG5					116	50	24	7	25		50	127	20	8	63	41	9196	
PE 376	9.10	A5	47.5		49	56	53						35	107	47	20	28	50	9939	
PE 377	10.70	F2	31.3	0.45	32	33	79	14	8	15	13		42	111	29	18	39	54	4414	
PE 378	8.71	GK0					141	57	41	24	35		79	167	17	4	77	62	9696	
PE 379	10.82	DGG5					132	58	31	10	38		60	131	22	-5	58	64	9583	
PE 380	11.15	DK2					121	58	50	7	43	22	81	154	20	-10	76	64	8382	
PE 381	8.95	GK2					153	60	54	39	40	20	102	224	3	-3	99	48	9996	
PE 383	9.51	GK0					140	57	46	30	30		82	174	17	-3	95	65	8264	
PE 384	10.64	GK0					134	60	39	27	36		79	180	12	8	68	59	9695	
PE 388	10.40	GK0					188	67	46	30	41	18	90	184	24	-2	55		8172	
PE 389	10.65	F5	26.2	0.54	25	27	74	14	8	8	20		39	98	38	7	43	44	2212	

NO	m_{4400}	SP	H_I	G/H_I	H_Y	H_δ	K	G	g	c	4385	4227	C_1	C_3	U_1	U_2	U_3	U_4	W	REM.
PE 390	10.99	DG8					83	54	31	8	32		59	129	12	9	39	48	9796	A
PE 392	10.19	DGK0					133	59	42	20	45	25	85	164	24	-8	85	56	9595	
PE 393	11.33	GK5						70	66	44	61	66	138	270					4030	
PE 395	10.07	F5	31.6	0.63	31	36	67	20	13	2			39	90	27	10	34	45	9934	
PE 396	11.77	GK5						74	72	21	51	23	120						1020	A
PE 398	11.20	DGK0					125	70	43	23	41		77	165	-2	1	78		7262	
PE 399	9.82	GK2					158	46	49	33	38		98	205	8	-4	79	31	9593	
PE 403	11.25	F8	25.1	1.08	25	25	93	27	14	8	21		42	103	30	16	40	57	8656	
PE 404	8.81	GK0					161	52	41	43	34		89	205	0	3	106	43	9996	
PE 405	10.90	F2	31.8	0.44	33	33	74	14					40	102	44	14	28	71	2223	
PE 407	11.05	GK2					141	58	58	39	39	17	109	235	10	1	79	55	7483	
PE 412	9.54	DK0					106	52	35	5	33		65	125	20	1	60	57	9996	
PE 413	11.25	F5	27.0	0.83	25	29	80	22	12	4	18		39	101	26	25	20	61	4332	
PE 414	12.31	F5	25.7	0.96	22	31	74	25	15	9	26		36	105					1110	
PE 415	11.53	GG8					122	52	37	22	32		76	163	19	-8	72	38	6362	
PE 416	10.58	GK0					122	48	42	30	33		85	162	26	-1	80	62	6663	
PE 417	10.02	F8	31.0	1.14	32	32	104	35	15	2	18		43	108	27	15	34	66	3221	
PE 419	9.80	F5	30.1	0.59	31	31	72	18	6	6	10		37	91	34	10	41	53	4333	
PE 422	10.22	GG0					100	52	22	13	32		53	119	20	2	53	48	8283	
PE 423	10.71	GK0					147	55	39	28	31		83	183	11	13	66		5252	
PE 427	11.44	DGG8					129	54	37	13	32		78	159	28	15	56	62	2322	
PE 428	9.85	F8	27.3	1.17	27	27	96	32	13	11	16		50	107	29	12	42	60	4444	
PE 429	12.20	F8	26.3	1.39	31	22	94	37	14	11	21		44	97	23	6	45	60	7365	
PE 430	9.03	F2	32.1	0.44	32	36	62	14					41	93	32	16	37	50	8744	
PE 432	11.31	DGG5					109	48	30	11	29		61	129	23	18	49	69	3332	
PE 433	11.77	F5(A)	23.0	0.77	26	20	67	18					47	103	25	18	44	67	1221	
PE 434	13.35	DG0					80	37	16	9	28		42	83					3130	
PE 435	10.41	GK0					139	54	45	44	44		91	191	-13	18	69		5251	
PE 436	10.63	F5	30.1	0.82	29	33	82	25	14	9	17		44	94	33	14	42	43	9775	
PE 437	11.07	DG5					98	40	29	5	30		59	119	12	17	36	29	5132	
PE 439	10.76	F5	27.3	0.99	26	28	99	27	16	8	16		47	107	24	8	24	44	5543	
PE 440	13.09	GK0						52	43	29	44		97	216	30				2020	
PE 441	13.64	F8	35.6	1.32	45	26	99	47	15	12	21		45	126	-3	20	46		1110	
PE 442	8.79	GG5					126	39	31	24	24		77	163	14	16	65	60	9696	
PE 443	10.68	DG0					102	38	23	5	23		51	104	31	7	51	56	9186	
PE 447	10.31	DGK0					159	52	44	18	34		96	169	26	4	78	73	3233	
PE 448	10.91	F5	31.0	0.72	32	32	73	22	15	9	18		40	106	33	13	38	52	7746	
PE 450	11.53	GK0					120	64	42	30	45		86	169	17	21			3131	
PE 452	11.67	DGG0						39	27	14	26		78						3040	C
PE 453	11.23	DG8					103	42	30	8	30		61	126	19	10	61	43	4444	A
PE 458	6.63	F5	28.4	0.79	28	28	77	22	7	10	17		46	111	32	18	42	53	9979	
PE 462	9.84	F5	26.2	0.81	23	31	84	21	12	7	15		42	102	23	17	40	39	8773	
PE 465	12.69	DG8					117	44	31	8	34		54	115	12	-24	72	56	3231	
PE 468	10.67	F8	32.1	1.06	33	34	83	34	16	4	18		44	106	13	21	40	48	9384	
PE 471	11.24	DG0					92	50	21	10	23		49	117	-3	24	28		2111	
PE 472	11.11	F5	35.1	0.64	33	44	130	22					49						3101	
PE 474	9.93	F5	29.9	0.79	29	32	90	24	12	10	25		42	108	25	7	44	30	8842	
PE 475	9.20	GK2					162	55	57	28	40	18	105	223	15	-5	64		9393	
PE 476	9.79	GK0						51	40	32	33	25	86	194					6060	
PE 477	10.24	F8	30.6	1.58	34	27	120	48	16	12	23		48	117	14	17	57	38	6242	

5. THE INTERSTELLAR ABSORPTION IN THE DIRECTION OF THE SGP

5.1 The intrinsic colours.

The intrinsic colours for stars earlier than G0 were determined with the aid of the relations $(B-V)_o = f(H_r)$ and $(B-V)_o = f(G/H_r)$ given by Ljunggren and Oja (1961).

The following relations, computed from Häggkvist and Oja (1970, eqs. 6 and 7) were used for the late-type stars:

$$\begin{aligned} (B-V)_o &= 1.177\ g + 0.347 && \text{dwarfs (F8 - dK5)} \\ (B-V)_o &= 1.442\ g + 0.204\ c + 0.360 && \text{giants (gG8 - gK2)} \end{aligned} \qquad (10)$$

No accurate calibrations are available for the dg-stars ("sub-giants").

5.2 The absolute magnitudes.

The mean absolute visual magnitudes, M_o, for main sequence stars were determined by means of the relations given by Ljunggren and Oja (1961). For the giant stars gG8 - gK2 the following relation, computed from Häggkvist and Oja (1970, eqs. 6, 7, and 26) was used:

$$M_o = 2.50 - 1.2\ g - 3.86\ c \qquad \text{(gG8 - gK2)} \qquad (11)$$

5.3 The colour excesses.

From the observed colours and the intrinsic colours computed according to 5.1, colour excesses were determined by means of the relation

$$E = (B-V) - (B-V)_o \qquad (12)$$

However, the influence of interstellar reddening upon the spectral criteria g and c. used for computing the intrinsic colours for late-type stars, will lead to too small excesses when derived by (12). The necessary correction factors were taken from Ljunggren (1965). (1.19 for the dwarfs and 1.26 for the giants).

The colour excesses were plotted versus the distance moduli $V - M_o$, corrected for interstellar absorption (See 5.4), and mean excess curves were computed for early-type stars, late-type dwarfs, and late-type giants, weighted according to the weights of the spectrophotometric criteria. The final mean excess curve was computed from these curves, weighted according to the inverse of the squares of the dispersions.

As may be expected at the S.G.P., the colour excesses are small. This can be seen in the deviations from the non-reddened line in the two-colour diagram, Fig. 1, which is a plot of U-B versus B-V for the stars in Table 3. Some of the stars far to the right in the figure are listed in Luyten's lists of faint blue stars (Luyten and La Bonte 1973). Possibly the U-magnitudes are not very reliable for these faint stars.

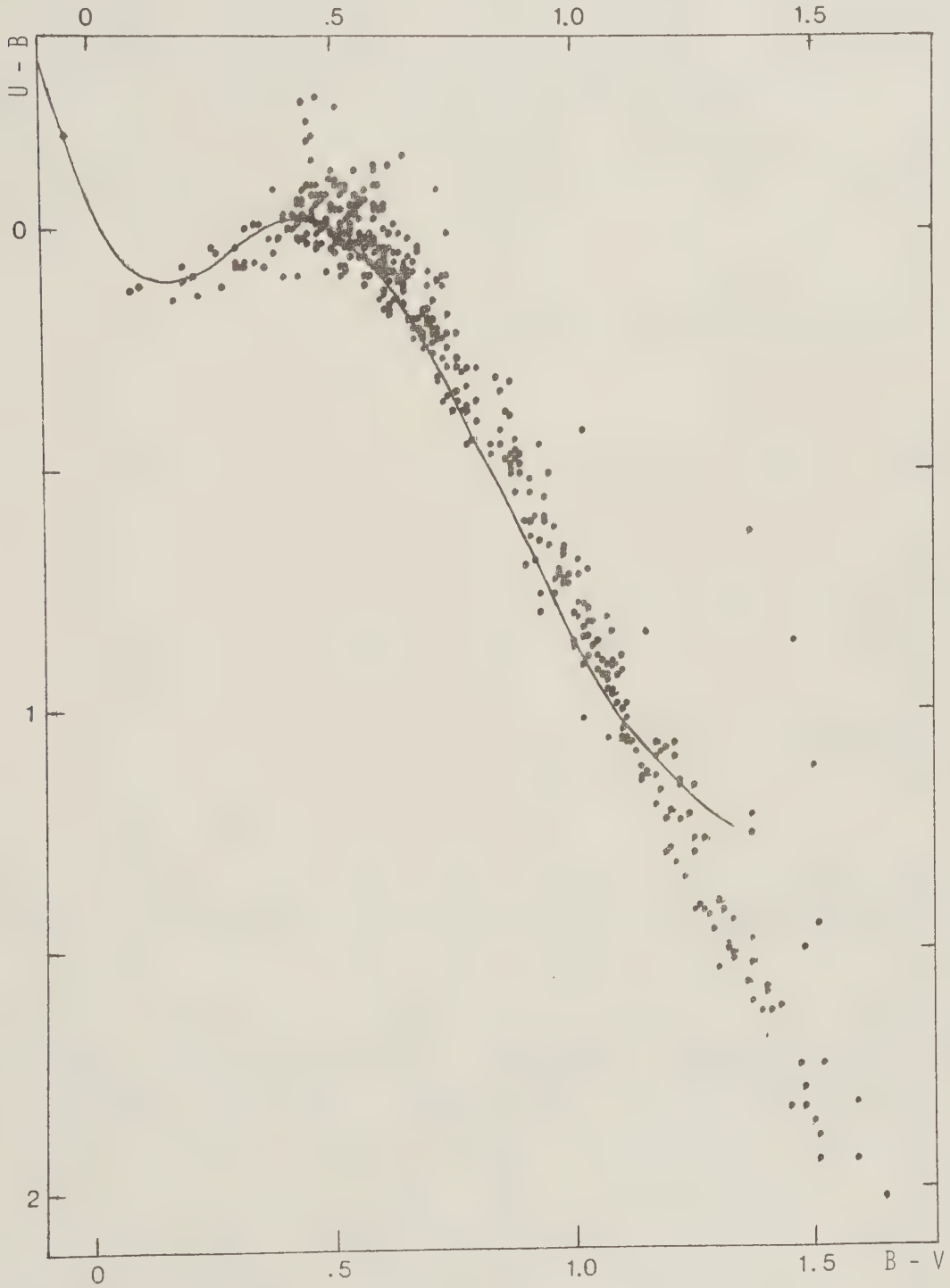


Fig. 1. The two-colour diagram for the stars in Table 3.

The necessity to use different excess curves owing to variations over the region was checked in the following way.

At first, each declination zone of the spectrophotometric catalogue was divided into two equal regions. No systematic differences were found in the excess curves for these four regions.

Then, from spectral data (not published in this paper) intrinsic colours and absolute magnitudes were computed for stars with photoelectrically observed B - V outside the central zones. The individual excesses for these stars were plotted on a map over the whole SGP-area. No significant variations could be found.

The mean excess curve, Fig. 2, is thus assumed to be valid for the whole region investigated.

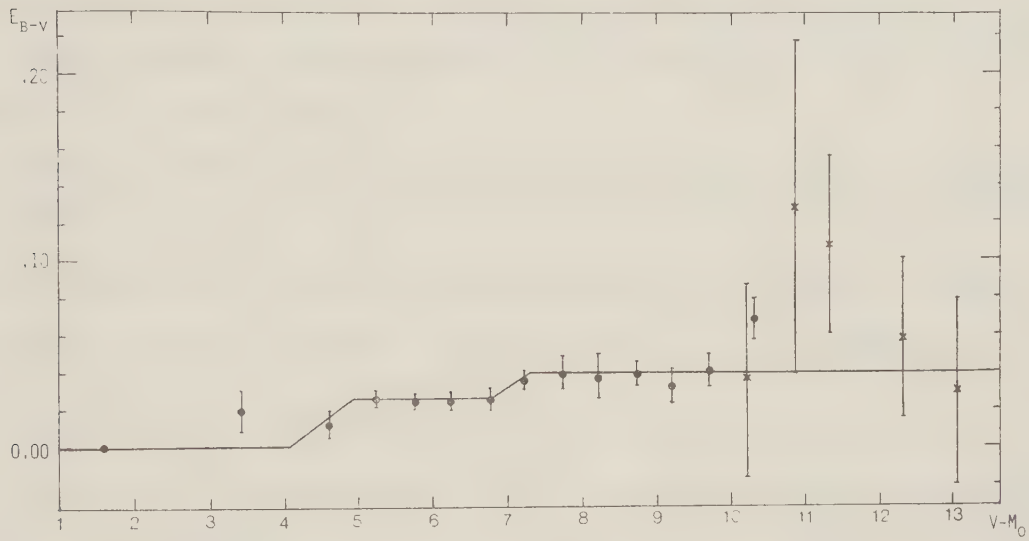


Fig. 2. Colour excess as a function of distance modulus. The mean errors are marked with bars. Crosses: the result from giant stars.

The colour excesses determined from early-type stars agree extremely well with those from late-type dwarfs. The giants give, however, a few hundredths of a magnitude higher excesses with greater dispersion. This may be due to a less accurate calibration of their intrinsic colours, as can be seen from the coefficients in (10). Many of the giants may be slightly metal-poor stars, which would give smaller values of the spectral criteria g and c and thus smaller values of the intrinsic colours. However, very metal-poor giants will fall among the dg-stars, and are thus not used for the excess curve.

5.4 The absorption.

The interstellar visual absorption, A_V, was computed from the relation $A_V = 3.2\ E_{B-V}$. In the direction under consideration there appears to be no absorption inside a distance of about 80 pc, where a cloud is absorbing 0.10 mag. At about 250 pc another cloud is found, absorbing $0^m.03$ mag. An increase in the excesses at about $V - M_o = 9.75$ mag may indicate a cloud at 900 pc, but the reality of that cloud is doubtful from the present data. In the computations below, the total visual absorption is taken to be 0.13 mag. from 250 pc on ($E_{B-V} = 0^m.04$).

5.5 Comparison with other determinations.

Most investigations of the interstellar reddening at the S.G.P. show that the mean colour excess in B-V amounts to only a few hundredths of a magnitude:

Appenzeller (1975) determined a minimum value of the excesses, $E > 0^m.016$;

Lloyd Evans (1970) and Philip and Tifft (1974) found $E = 0^m.02$;

Bond-Perry-Bidelman (1971) found for 46 B-A stars $E = 0^m.029 \pm 0.005$;

and Rodgers (1971) obtained $E = 0^m.04 \pm 0.03$.

The four last determinations are in accordance with the present results, particularly, if the possibility of an uneven distribution of absorbing matter is considered.

From a statistical investigation of the space distribution of clusters of galaxies, Holmberg (1974) found the mean colour excess at the galactic poles to be $E_{B-V} = 0^m.054 \pm .004$ (m.e.). This is somewhat higher than obtained in this paper, unless the cloud at 900 pc is regarded as real. The excesses for larger distances do not, however, contradict his result.

6. THE SPACE DISTRIBUTION OF THE STARS

6.1 The space densities.

6.1.1 Introduction.

The density distribution $D(r)$ can be derived from the distribution $A(m)$ of the apparent magnitudes with the aid of the fundamental equation of stellar statistics

$$A(m) = \omega \int_0^\infty r^2 \, D(r) \, \varphi(M) \, dr \qquad (13)$$

where $\varphi(M)$ is the luminosity function for the stars counted in $A(m)$. In order to simplify the luminosity function, the stars are usually separated into suitable groups according to spectral type and luminosity class. The luminosity function can then be characterized by a relatively small dispersion $\sigma(M)$ around a mean absolute magnitude, M_o, in a unit volume of space.

The method used in this investigation for solving the integral equation (13) was originally proposed by Malmquist (1941, 1942) and has been modified in the same way as by Oja (1966), that is, the stars have been divided into homogeneous groups with the same absolute visual magnitude M_o and the star counts made in intervals of the distance modulus $V-M_o$, where the apparent magnitudes V had been individually corrected for interstellar absorption.

From the distribution $A(V-M_o)$ and its logarithmic derivatives the frequency function $n(z'-M_o)$, where $z' = M_o - 5 + 5 \log r$, is computed under the assumption that the dispersion in M_o is $0^m.6$. The relation $n(z'-M_o)$ then gives the density function $D(r)$.

The investigated region is situated only $3^\circ.2$ from the South Galactic Pole. The density function $D(r)$ was transformed to the density function $\Delta(z)$, where z is the distance perpendicular to the galactic plane, simply by multiplying all distances r by $\cos 3^\circ.2$.

6.1.2 The material.

The stars have been divided into the following groups according to their absolute visual magnitudes M_o.

I) Main sequence stars (A - dK5) have been grouped in 1^m-intervals of M_o in six groups from $M_o = 2$ to $M_o = 8$.

II) Giants (gG8 - gK2) have about the same absolute magnitude and constitute one group.

Stars with luminosity class dg (sub-giants) in the catalogue can not be used for space densities because of the lack of calibration in M_o. However, the luminosity classification is rather uncertain for faint stars, and it is highly probable that faint dg-stars are wrongly classified dwarfs, especially those which are bluer than, say, B - V = 1.10, corresponding to $M_o \leq 7$ for the main sequence stars. Therefore, dg-stars are considered as dwarfs if they have $V \geqslant 13$ and $B - V \leqslant 1.10$. The distributions $A(V-M_o)$ for each group were determined by counting the stars in $0^m.25$ - intervals of $V-M_o$.

6.1.3 The areas.

The actual areas for the star counts are presented in Table 5. All star counts are reduced to the area 11.8 square degrees, corresponding to a solid angle $\omega = 0.003585$.

Table 5.

Region of the	Area in $\square^o$	Limit of completeness in V
photoelectric catalogue (Table 3)	39.7	10.5
photometric catalogue (B,V)	11.8	15.8
photometric catalogue (B,V)	5.8	16.3
spectrophotometric catalogue	11.8	12.75

6.1.4 Faint stars.

In order to be able to extend the determination of the space densities of the stars to as large distances as possible, the faint stars, for which only B,V photometry is available, were included in the star counts after making the assumption that all stars are dwarfs. The error in the star numbers will be less than 3 % by this assumption.

Intrinsic colours $(B-V)_o$ were derived by correcting the observed B-V by means of the adopted excess curve. The absolute magnitudes were then obtained by a relation $M_o = f(B-V)_o$, derived from the relations presented in 5.1 and 5.2.

6.1.5 The results.

The density curves derived from the star counts are shown in Fig. 3 a,b for the different groups of stars. The logarithm of $\Delta(z)$ is given as a function of the distance z perpendicular to the galactic plane. The densities for small values of z cannot be obtained from the present star counts. Extrapolations to $z = 0$ would be rather uncertain, especially for the giants, where reliable $\Delta(z)$ are available only from $z = 500$ pc. The determination of $\Delta(0)$, the star density at $z = 0$, will be described in next section.

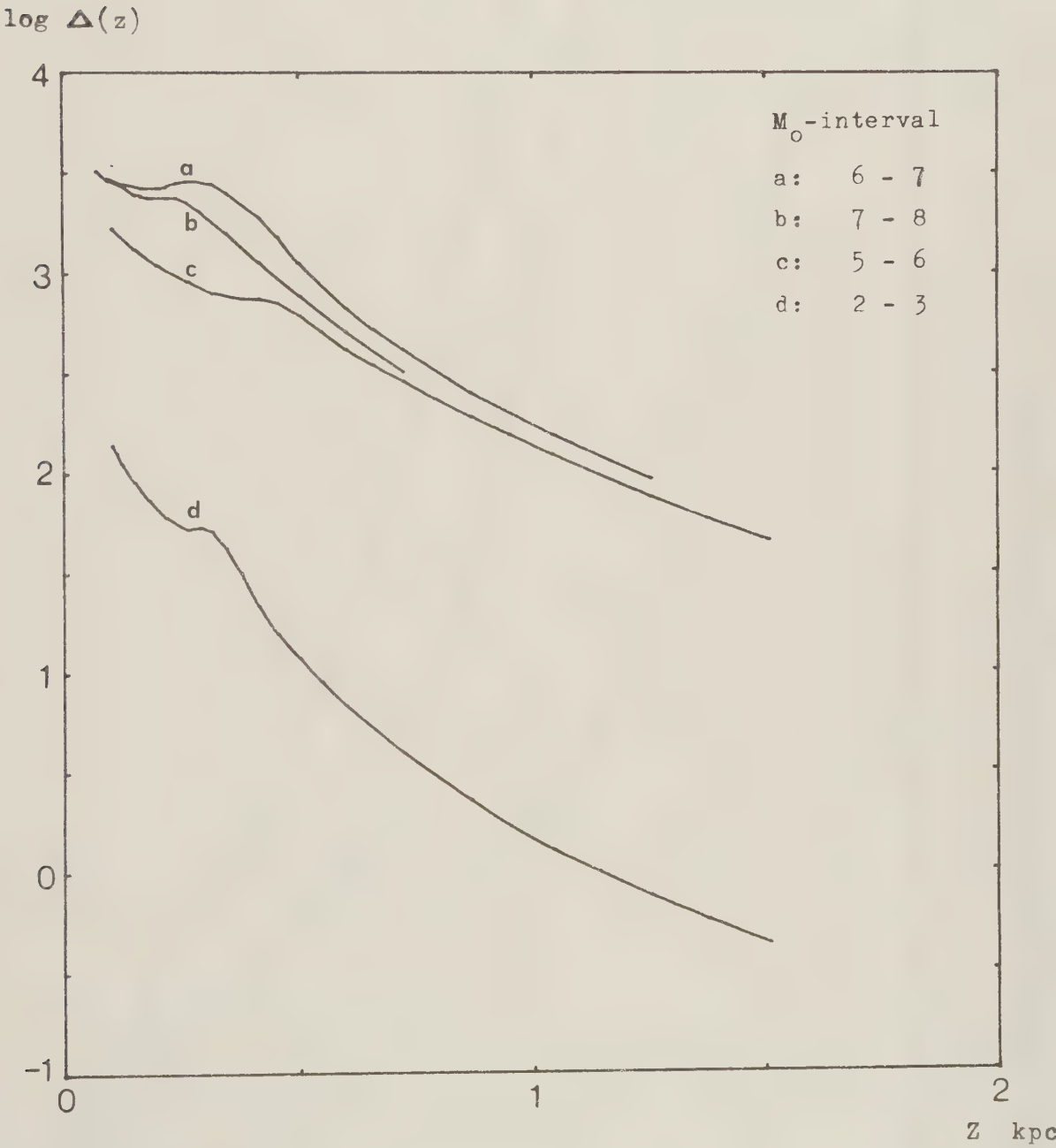


Fig. 3a. Density curves for different groups of stars.

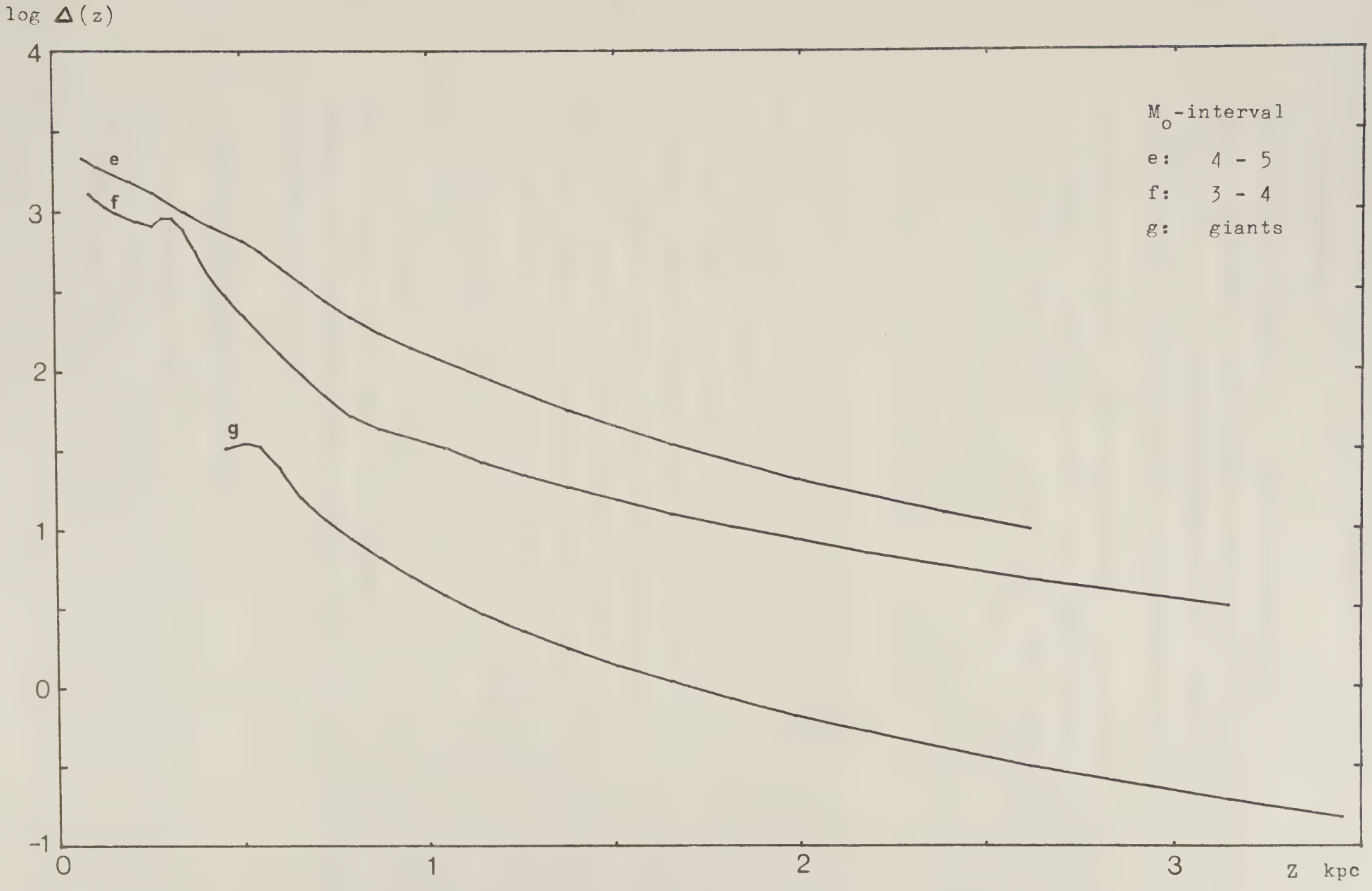


Fig. 3b. Density curves for different groups of stars.

6.2 The determination of $\Delta(0)$, the star density at z = 0.

6.2.1 Introduction.

For the computation of K_z, the force perpendicular to the galactic plane, the density function $\Delta(z)$ must be related to $\Delta(0)$, the star density at z = 0. The determination of this quantity is therefore rather crucial for computing the relative star density $\Delta(z)/\Delta(0)$.

Regarding the dwarfs, where reliable $\Delta(z)$ are available from about z = 100 pc, it would be possible, with $\Delta(0)$ known, to interpolate the density curves to z = 0 with fairly good approximation. The density function of the giants must however be extrapolated from 500 to 0 pc. To be able to make this extension with any certainty it would be necessary to determine not only $\Delta(0)$, but also the relative density function $\Delta(z)/\Delta(0)$ for small z.

Nearby stars would give reliable $\Delta(0)$, if the stars could be divided into the same groups as by the density calculations in the SGP-region and the star counts could be made in as large a region of the sky as possible, preferably the whole sky. This was made possible by a compilation of all late-type stars over the whole celestial sphere, brighter than V = 6.05, kindly put at my disposal by Oja. Together with UBV-photometry and photoelectrically measured spectral criteria g_e and c_e (Häggkvist and Oja 1970), this material includes equatorial coordinates, proper motions, radial velocities and trigonometric parallaxes. By means of the spectral criteria g_e and c_e, it was possible to derive absolute magnitudes, intrinsic colours, and colour excesses by exactly the same calibrations as in the SGP-region and to divide the stars into exactly the same groups as for the density calculations in 6.1. The z-distances perpendicular to the galactic plane were computed from the coordinates and parallaxes, trigonometric or photometric. The desired quantity $\Delta(0)$ was computed as follows.

6.2.2 $\Delta(0)$ for main sequence stars.

For the main sequence stars the same method as described by Oja (1966) in deriving the densities at r = 0 in his Table 10 was used. The late-type dwarfs were taken from the compilation mentioned above, and the early-type stars (A-F) from his material used there, with the difference that the stars were counted in 0.5-intervals of $(M_V)_o$ instead of $(M_{4400})_o$.

The result is given in Table 6 for the different sub-groups of stars. N is the number of stars, $\Delta(0)$ the star density at $z = 0$, and ε the mean error in $\Delta(0)$, computed from the square root of the number of stars.

Table 6.

Space densities for main sequence stars.
Unit: stars/10^6 pc^3

Interval in M_o	N	$\Delta(0)$	ε
$2.0 < M_o \leq 2.5$	34	180	30
2.5 " 3.0	34	360	60
3.0 " 3.5	25	530	110
3.5 " 4.0	25	1060	210
4.0 " 4.5	62	1320	170
4.5 " 5.0	21	890	200
5.0 " 5.5	11	930	280
5.5 " 6.0	5	850	380
6.0 " 6.5	7	2370	890
$6.5 < M_o \leq 7.0$	2	1350	950

In the star counts, stars with southern galactic latitudes were at first separated from stars with northern latitudes. A slight difference was found in the interval $4 < M_o \leq 5$ (Table 7). In this interval the southern density was adopted.

Table 7.

Space densities for main sequence stars.
Unit: stars/10^6 pc^3
s = southern, n = northern latitudes.

Interval in M_o	N	$\Delta(0)$	ε
$4.0 < M_o \leq 4.5$	36 s	1535	255
	26 n	1110	220
$4.5 < M_o \leq 5.0$	12 s	1020	300
	9 n	770	260

6.2.3 $\Delta(0)$ for giant stars.

The giant group used in the density calculations in the SGP-region has been defined by means of the spectral criteria g_e and c_e and contains stars of spectral types gG8 - gK2, for which absolute magnitudes M_o could be determined. The giants of the nearby late-type stars were selected by the same criteria as in the SGP-region, thus forming a homogeneous group. The distances from the sun for the nearby stars are smaller than about 200 pc. The interstellar absorption is assumed to be small within this range. Stars with colour excesses greater than $|0.1|$ mag. were rejected as not being normal giants. The corrections for the effect of interstellar absorption were computed by means of the relation used in 5.4.

The limiting magnitude V=6.05 and the absolute magnitudes restrict the sample to 406 stars with $V-M_o < 4.538$.

The space density $\Delta(0)$ was determined from these stars by different methods:

6.2.3.1 Star counts in a sphere around the sun.

This is the same method as used for the main sequence stars. Stars with southern galactic latitudes (s) have been separated from northern stars (n). The result is given in Table 8 with the same notations as above.

Table 8.

Space densities for the giants.
Unit: stars/10^6 pc^3

$V - M_o$ max.	N	$\Delta(0)$	ε
2.5	16	171 n	43
	10	107 s	34
3.0	38	204 n	33
	27	145 s	28
3.5	57	153 n	20
	73	196 s	23
4.0	99	133 n	13
	125	168 s	15
4.5	189	128 n	9
	205	138 s	10

The differences between the densities of the northern and the southern stars are not systematic. A mean density within about 50 pc, corresponding to $V-M_o < 3.5$ yields (unit: stars/$10^6 pc^3$):

$$\Delta(0) = \cdot 175 \pm 15 \qquad (130 \text{ stars}) \qquad (14)$$

6.2.3.2 Star counts in spherical segments.

A sphere with its centre at the sun and a radius equal to 106 pc, the photometric distance corresponding to $V-M_o = 4.538$, is divided in parallel layers in z. The number of stars in each layer is counted and divided by the corresponding volume, a spherical segment, to give the density.

The photometric distance is according to Malmquist (1920):

$$\bar{r} = e^{b(V - M_o + 5 + 3.5\sigma^2)} \qquad (15)$$

where $b = 0.2\ ^e\log 10$. The dispersion in M_o, σ, is assumed to be $0^m.6$.

The space density by this method is (unit: stars/10^6 pc^3)

within 25 pc: $\Delta(0) = 160 \pm 11$ (201 stars) (16)

within 35 pc: $\Delta(0) = 156 \pm 10$ (268 stars) (17)

6.2.3.3 Star counts in successive zones of galactic latitude, b.

The stars were counted in four intervals of cos b from 1.00 to 0.96, and the densities derived by the method 6.3.3.1. The result is given in Table 9, where the same notations as before are used.

Table 9.

Space densities for giant stars.
Unit: stars/10^6 pc^3

cos b	N	$\Delta(0)$	ε
1.00 - 0.99	70	159	19
1.00 - 0.98	99	160	16
1.00 - 0.97	120	158	14
1.00 - 0.96	138	156	13

6.2.3.4 Star counts according to z distances.

In the fundamental equation of stellar statistics

$$A(m) = \omega \int_0^\infty r^2 \, D(r) \, \varphi(m + 5 - 5 \log r) \, dr \qquad (18)$$

the distance r from the sun is changed to z, the distance perpendicular to the galactic plane by means of the transformation

$$z = r \sin b \qquad (19)$$

where b is the galactic latitude of the star.

Putting

$\mu = m + 5 \log \sin b$, we obtain in a small area

$$\Delta A(\mu) = \frac{\Delta\omega}{\sin^3 b} \int_0^\infty z^2 \, D(z) \, \varphi(\mu + 5 - 5 \log z) \, dz \qquad (20)$$

$A(\mu)$ is obtained by integrating $\Delta A(\mu)$ over all latitudes in question.

With $\Delta\omega = 2\pi \cos b \, \Delta b$ the integral becomes for the whole sky

$$2 \cdot 2\pi \int_{b'}^{\pi/2} \frac{\cos b \, db}{\sin^3 b} = 2\pi \cot^2 b'$$

where b' is the lowest latitude for which no stars are excluded by the limiting magnitude m', according to

$$\mu = m' + 5 \log \sin b'$$

Hence,

$$A(\mu) \tan^2 b' = 2\pi \int_0^\infty z^2 \, D(z) \, \varphi(\mu + 5 - 5 \log z) \, dz \qquad (21)$$

Thus, if the stars are counted in intervals of μ or $(\mu - M_o)$ and these numbers are multiplied by $\tan^2 b'$, we have formally the same formula as (18) with the solid angle 2π, and the solution can be performed by the same method as before.

839 stars were counted in the interval -1.00 to +4.50 of $(\mu - M_o)$. At first, stars with southern galactic latitudes were separated from northern stars. No systematic differences were found, and the final computations were made for the whole sky. The space density was found to be constant to a distance of 20 pc, where a slow decrease begins.

The result is given in Table 10. Unfortunately it was impossible to extend the computations of space densities further than 50 pc. The density curve between 50 and 500 pc has therefore been extrapolated approximately. The density $\Delta(0)$ in Table 10 agrees very

well with the results from the other methods above, and is therefore adopted as the final result for the giants.

Table 10.

Space densities for the giants.
Unit: stars/10^6 pc^3

z	$\Delta(z)$	ε
0	158	11
20	158	11
25	152	14
50	145	14

6.2.4 The final densities $\Delta(0)$.

The densities $\Delta(0)$ in Tables 6 and 7, computed for main sequence stars in $0^m.5$-intervals in M_o, were summed up into 1^m-intervals to give the same groups as for the density calculations in the SGP-region.

The resulting values for all different star groups (Table 11) have been used for deriving the relative density curves, $\Delta(z)/\Delta(0)$, necessary for the computations of the force K_z, Fig. 4.

Table 11.

Final $\Delta(0)$ for the different star groups.
Unit: stars/10^6 pc^3

Group	Interval in M_o	$\Delta(0)$	log $\Delta(0)$
dwarfs	$2.0 < M_o \leq 3.0$	540	2.73
	3.0 " 4.0	1590	3.20
	4.0 " 5.0	2555	3.41
	5.0 " 6.0	1780	3.25
	$6.0 < M_o \leq 7.0$	3720	3.57
giants	gG8 - gK2	158	2.20

6.3 The relative density distribution.

6.3.1 The results.

The star densities for the first few hundred parsecs above the plane are relatively uncertain because of the small numbers of stars at these distances. The small "bulges" at about 400 pc (Fig. 3) are considered to be a result of these small star numbers, and they are smoothed out in the determination of the relative density curves. The curves for some of the groups are given in Figure 4.

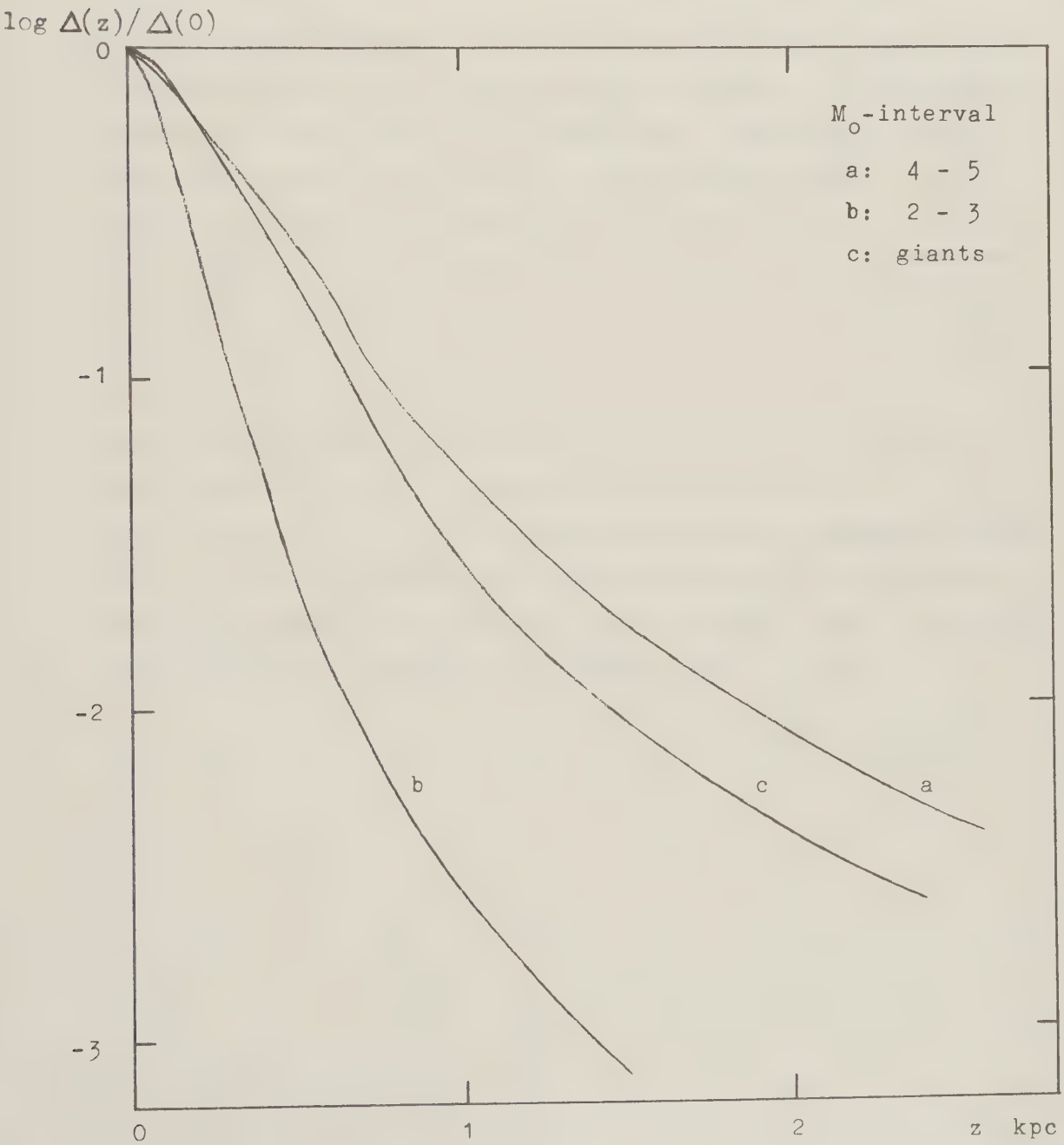


Fig. 4. Relative density curves for some groups of stars.

6.3.2 Comparison with other determinations.

A direct comparison of the results from other investigators, having determined density distributions in the z-direction, is not easy to carry out. The stars are combined into spectral groups in somewhat different ways, so that the groups having the same mean absolute magnitude are not necessarily compatible.

The relative density distribution depends upon the value used for the density $\Delta(0)$ close to the sun, which hardly can be determined with certainty from star counts in small areas of the sky.

Elvius (1965) has collected density distributions derived by different authors. The late-type giant group is essentially identical in all these investigations, consisting mainly of gK0 - gK2 stars (See Table 12). The density gradient for the giants is found to be somewhat less steep than found by other investigators. The density curve agrees very well with that of Oort (1960) for distances greater than 500 pc. The slight discrepancy up to 500 pc may be due to the interpolation from 50 to 500 pc of the density curve in this paper.

The F and dG stars are compared to the star groups with M_o in the intervals 2 - 3, 3 - 4, and 4 - 5 (See Table 13).

Also for the dwarf stars the density decreases somewhat more slowly than in the other investigations. However, the absolute densities for the stars with M_o = 4 - 5 and Elvius' F8 - dG8 stars agree well for distances greater than 300 pc.

Table 12.

Density distribution for late-type giants, normalized to unity at z either 0 or 50 pc. The absolute density corresponding to unity is given on the last row (unit: stars/10^6 pc^3).

z pc	This paper gG8-gK2	van Rhijn gK0-gK5 (1956)		Hill gK (1960)	Oort gK (1960)	Elvius gG5-gK6 (1962)	Upgren G5-M III (1962)
		+z	-z				
0	1.00	1.00	1.00	1.00	1.00	.....	....
50	.96	.90	.80	.91	.95	1.00	1.00
125	.82	.71	.61	.70	.73	.68	.56
250	.52	.52	.42	.37	.42	.24	.27
500	.19	.17	.21	.13	.13	.047	.12
1000	.028	.06	.05	.035	.025	.012	.05
1500	.009	....	....	.016	.008	.005	....
Absolute density	158	300		....	....	400	270

Table 13.

Density distribution for F and dG stars, normalized to unity at z either 0 or 50 pc. The absolute density corresponding to unity is given on the last row (unit: stars/10^6 pc^3).

z pc	This paper M_o - interval 2 - 3	3 - 4	4 - 5	Elvius F2-F5 (1962)	Upgren A7-F2 (1962)	Elvius F8-dG8 (1962)	Upgren F5-G2V (1963)
0	1.00	1.00	1.00	....	....	....	....
50	.88	.92	.92	1.00	1.00	1.00	1.00
100	.63	.80	.80	.90	.23	.85	.65
150	.42	.66	.68	.65	.12	.65	.50
200	.27	.55	.59	.40	.063	.45	.36
300	.11	.38	.45	.18	.024	.26	.23
500	.022	.14	.24	.06	.007	.12	...
1000	.0028	.022	.050	...	.001	...	...
Mean M_{pg} Mean M_V	+2.5	+3.5	+4.5	+3.0	+3.0	+5.0	+4.5
Absolute density	540	1590	2555	800	900	5000	5500

7.1 Introduction.

The density distribution, $\Delta(z)$, for a group of stars can be used to compute K_z, the force perpendicular to the galactic plane, according to methods worked out by Oort (1932, see also Hill 1960, and Bok 1970), if the distribution of the z-velocities for the same group is known. We have

$$\frac{1}{\Delta(z)} \frac{\partial}{\partial z} \left[\Delta(z)\, \sigma_z^2\right] = K_z \qquad (22)$$

where z is the distance from the galactic plane and σ_z the velocity dispersion at the height z.

If the velocity distribution is a Gaussian or a sum of Gaussian distributions, K_z can be computed from the relation

$$\Delta(z) = \Delta(0) \sum_i \theta_i\, e^{\frac{1}{\sigma_i^2} \int_0^z K_z dz} \qquad (23)$$

where $\Delta(0)$ is the star density at $z = 0$ and θ_i the proportions of the Gaussian components in the galactic plane, $(\sum_i \theta_i = 1)$. If there is only one Gaussian component, σ_z^2 is independent of z. The velocity distribution at height z is then identical with that at $z = 0$, and can therefore be determined from nearby stars.

7.2 The velocity distribution for nearby stars.

7.2.1 Observed ż-velocities.

From the kinematic data for late-type stars compiled by Oja, and used above for the density calculations, the velocities, ż, perpendicular to the galactic plane have been computed (except for a few stars, for which no radial velocities were available).

Corrections for the effect of galactic rotation were applied to the radial velocities and to the proper motions, transformed from the equatorial to the galactic coordinate system. The proper motions were also corrected for the errors in Newcomb´s constants of precession (Fricke 1967).

The adopted distance of the star (from the sun) is the weighted mean of the photometric distance and the trigonometric distance, or, when the trigonometric parallax is missing, the photometric distance only. The weights are derived from the probable errors of

the trigonometric parallaxes and from the dispersion $0^m.6$ in the absolute magnitudes.

A mean error, ε, for each velocity has been calculated from the given errors in proper motions and distances. For the radial velocities a mean error of 1 km/s has been adopted.

Homogeneous groups as to density and velocity distributions were obtained by dividing the material into groups exactly in the same way as for the $\Delta(z)$ - calculations. The numbers of stars in the different groups are given in Table 14.

Table 14.

Group	Interval in M_o	Number of stars
Main sequence stars	$2.0 < M_o \leqslant 3.0$	0
	3.0 " 4.0	15
	4.0 " 5.0	124
	5.0 " 6.0	23
	$6.0 < M_o \leqslant 7.0$	22
Giants	gG8 - gK2	965

The distributions of the observed velocities, $\dot{z}$, and of their mean errors, ε, were computed for the dwarfs (all main sequence stars in Table 14) and for the giants within 150 pc from the sun, a sample of 815 stars. The results for the giants are given in Figure 5. Similar results were found for the dwarfs.

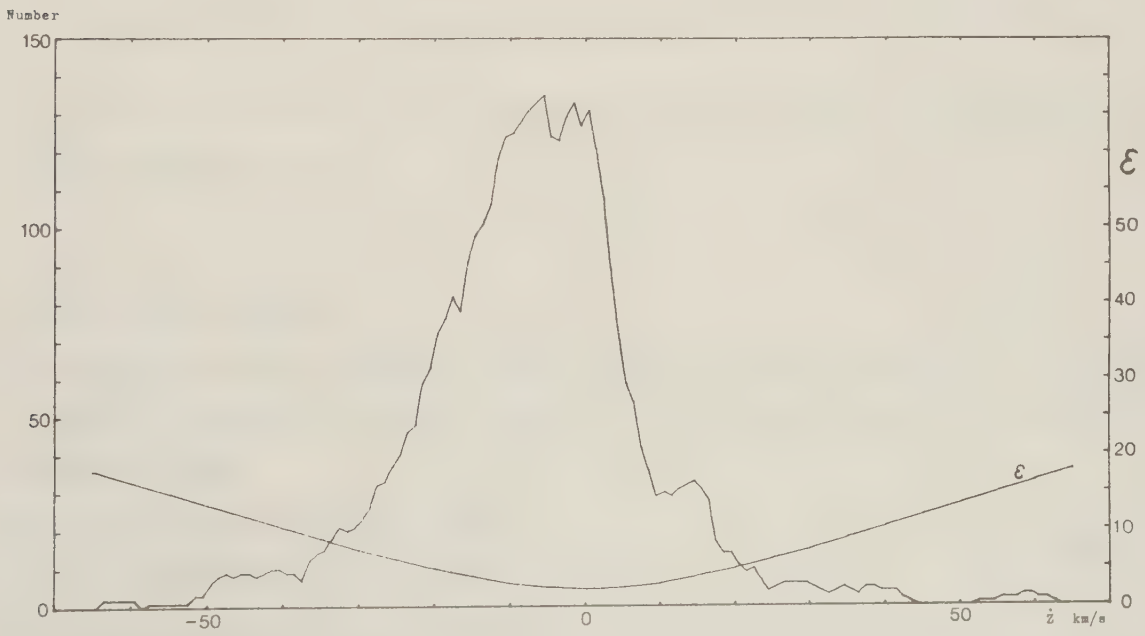


Fig. 5. The distribution of the observed z-velocities and of their average mean errors, ε, for the giants within 150 pc from the sun.

The removal of the effect of the observational errors gave the true distribution shown in Fig. 6. Most striking are the peaks at -25 km/s and +12 km/s, symmetric to the mean, -7 km/s (the solar motion with opposite sign). It is evident, that a Gaussian distribution or a sum of Gaussian components with the same mean do not represent the observed velocity distribution very well.

Such a "segmented distribution" of the ż-velocities has also been found by Schilt (1950). It is difficult to give an explanation for these features. Some of the stars belong to the moving groups found by Eggen (1958) and Woolley (1970). If these stars are removed, the segmentation is, however, still more pronounced.

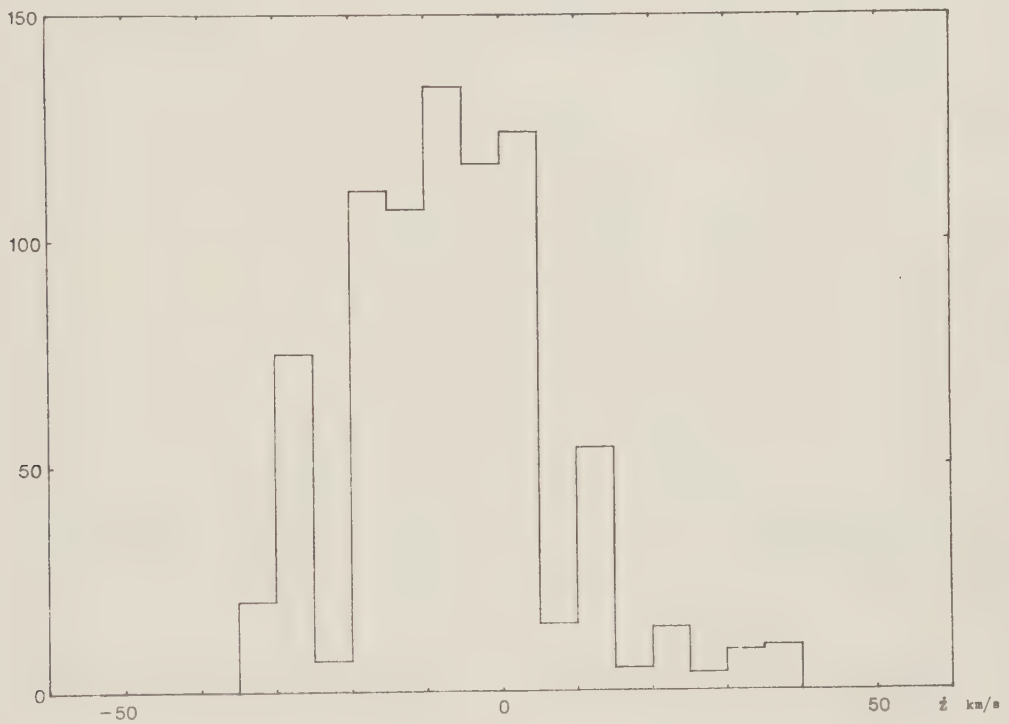


Fig. 6. The z-velocity distribution for the giants corrected for observational errors.

7.2.2 The solar motion.

The solar motion perpendicular to the galactic plane, W, is found from the observed velocity distribution (Fig. 5) as the mean with opposite sign.

For the giants $W = +7$ km/s
dwarfs $W = +5$ km/s (24)

in close agreement with the basic solar motion (Bok 1970).

7.2.3 Adopted velocity distributions.

Velocity distributions relative to the galactic plane (through the sun) were computed, with the values on the solar motion in (24), from the observed distributions for the giant group (965 stars) and the dwarf group with $4 < M_o \leq 5$ (124 stars). The counts were made in velocity intervals of 1 km/s. The sum of the frequencies in 5 consecutive intervals is plotted in Figure 7.

According to the "well-mixed" condition, these distributions, determined from stars close to the sun, will be fully representative even for the more distant stars used in the density calculations.

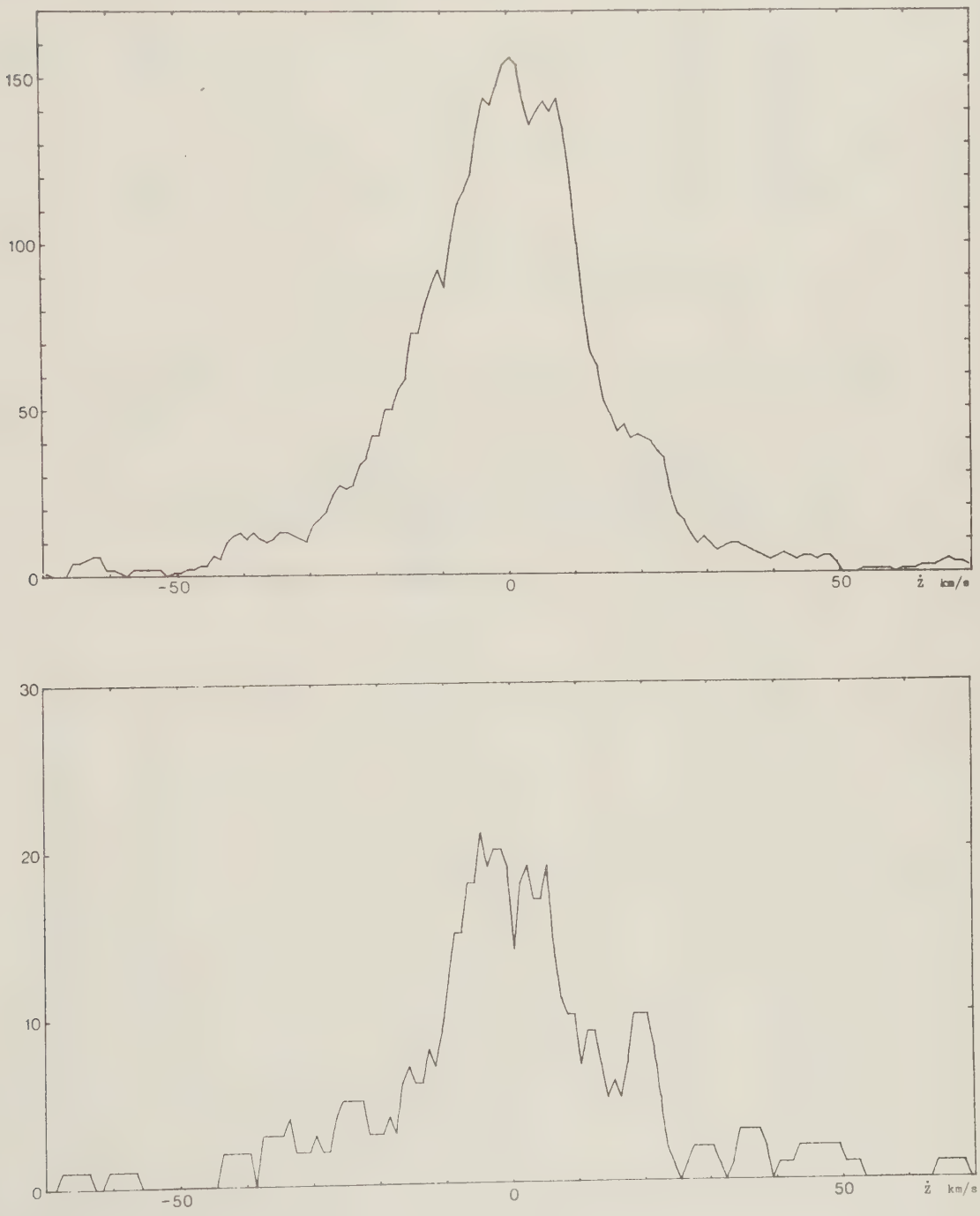


Fig. 7. Adopted z-velocity distributions for the giants (above) and the dwarfs with $4 < M_o \leq 5$ (below). The frequencies refer to velocity intervals of 5 km/s.

7.3 The computation of K_z.

7.3.1 From a two-Gaussian model.

As pointed out above, a sum of Gaussian distributions with the same mean cannot represent the observed velocity distribution very well. However, an attempt is still made to reproduce them with a sum of Gaussians. With the following two components (notation as in eq. 23) a fairly good agreement is reached. (See Table 15). The high-velocity giants will not, however, be satisfactorily represented by this model.

	Giants:	Dwarfs:
	$\sigma_1^2 = 87$	$\sigma_1^2 = 37$
	$\sigma_2^2 = 638$	$\sigma_2^2 = 638$
	$\theta_1 = .631$	$\theta_1 = .452$
	$\theta_2 = .369$	$\theta_2 = .548$

Table 15.

Comparison between observed and computed numbers in the two-Gaussian model.

$\lvert\dot{z}\rvert$ km/s	giants		dwarfs	
	observed	computed	observed	computed
0 - 5	285	304.9	39	43.6
5 - 10	256	241.6	26	27.7
10 - 15	148	156.6	17	14.4
15 - 20	95	90.1	10	9.2
20 - 25	70	52.6	10	7.3
25 - 30	31	34.7	4	5.9
30 - 35	20	25.3	2	4.7
35 - 40	17	18.8	6	3.6
40 - 45	15	13.7	3	2.6
45 - 50	7	9.6	2	1.8
50 - 55	2	6.5	1	1.2
55 - 60	1	4.2	1	0.8
60 -	18	6.2	3	1.2

K_z has been computed by the formula (23) and the result is shown in Fig. 8. The force function grows to a maximum at about 700 pc and declines slowly.

7.3.2 From a three-Gaussian model.

As apparent in the preceding section, a high-velocity component has to be included to account for the observed high-velocity stars. Therefore, a third component with very high velocities was added to the previous solution for the giants (notation as in eq. 23). The result is given in Table 16.

Giants:	$\sigma_1^2 = 87$	$\theta_1 = 0.60$	579 stars
	$\sigma_2^2 = 638$	$\theta_2 = 0.37$	357 stars
	$\sigma_3^2 = 5000$	$\theta_3 = 0.03$	29 stars

Table 16.

Comparison between observed and computed numbers in the three-Gaussian model for the giants.

$\lvert\dot{z}\rvert$ km/s	observed	computed
0 - 5	285	294.5
5 - 10	256	234.1
10 - 15	148	153.1
15 - 20	95	89.5
20 - 25	70	53.6
25 - 30	31	36.1
30 - 35	20	26.8
35 - 40	17	20.2
40 - 45	15	15.6
45 - 50	7	11.0
50 - 55	2	7.8
55 - 60	1	5.4
60 -	18	17.2

K_z has been computed by the formula (23) and the result is shown in Fig. 8. The force function has the same characteristics with increasing z as from the two-Gaussian model up to about 700 pc, but then grows to a high maximum at 1500 pc, due to the high-velocity component.

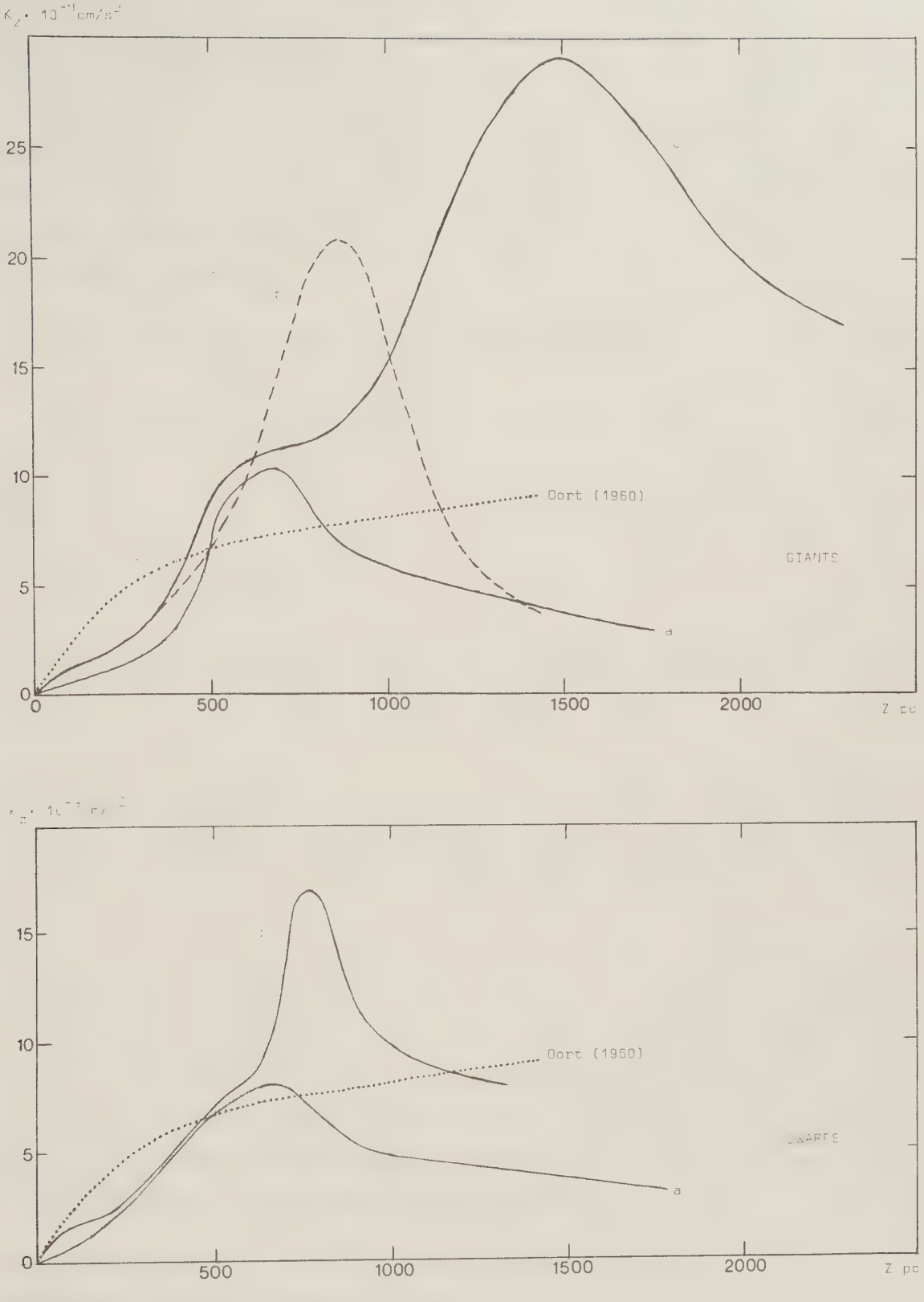


Fig. 8. The force K_z as a function of z, derived from the velocity distribution for the giants (above) and the dwarfs (below), represented by

a) two Gaussian components,

b) the observed velocity distribution,

c) three Gaussian components (one with very high velocities)

Oort's K_z, satisfying Poisson's equation is given for comparison.

7.3.3 From the observed velocity distribution.

Under the condition that the stars are well mixed, σ_z^2, and the mean of $\dot{z}^2$ as a function of z, can be computed from $\psi(\dot{z}_o)$, the distribution of the observed ż-velocities in the galactic plane, without any assumption of Gaussian components. However, the number of stars diminishes with increasing z, and with that the accuracy, because stars with small $\dot{z}_o$-velocities will never reach very high layers in z.

From the theory we have (e.g. Trumpler & Weaver, p. 612, 1962):

$$\sigma_z^2 = \frac{\Delta(0) \int_{-\infty}^{+\infty} \dot{z}^2 \, \psi(\dot{z}_o) \, d\dot{z}}{\Delta(z)} , \qquad (25)$$

and

$$\dot{z}_o^2 = \dot{z}^2 - 2\int_o^z K_z dz \qquad (26)$$

For varying values of $\int_o^z K_z dz$ we can compute from (25) $\Delta(z)\,\sigma_z^2$, which according to (22) is equal to $\int_o^z \Delta(z)\, K_z dz$.

A plot of $\int_o^z \Delta(z)\, K_z dz$ as a function of $\int_o^z K_z dz$ will give the derivatives $\Delta(z)$. The corresponding z-values are found from the observed $\Delta(z)$. Thus $\int_o^z K_z dz$ can be expressed as a function of z, from which K_z is found by differentiation with respect to z.

The integral (25) was computed from the velocity distributions in Figure 7, by summing up the contributions of the squares of velocities in intervals of 1 km/s for varying values of $\int_o^z K_z dz$. The result is given in Figure 10. The discontinuities are due to the step function character of the velocity distributions, and were smoothed before determining the derivatives $\Delta(z)$, giving the force function K_z as described above. See Figure 8.

The force function has the same general characteristics with increasing z as the Gaussian models. The peak is higher than that of the two-Gaussian model, but not as high as the three-Gaussian model (giants). The distance is about 800 pc from the galactic plane.

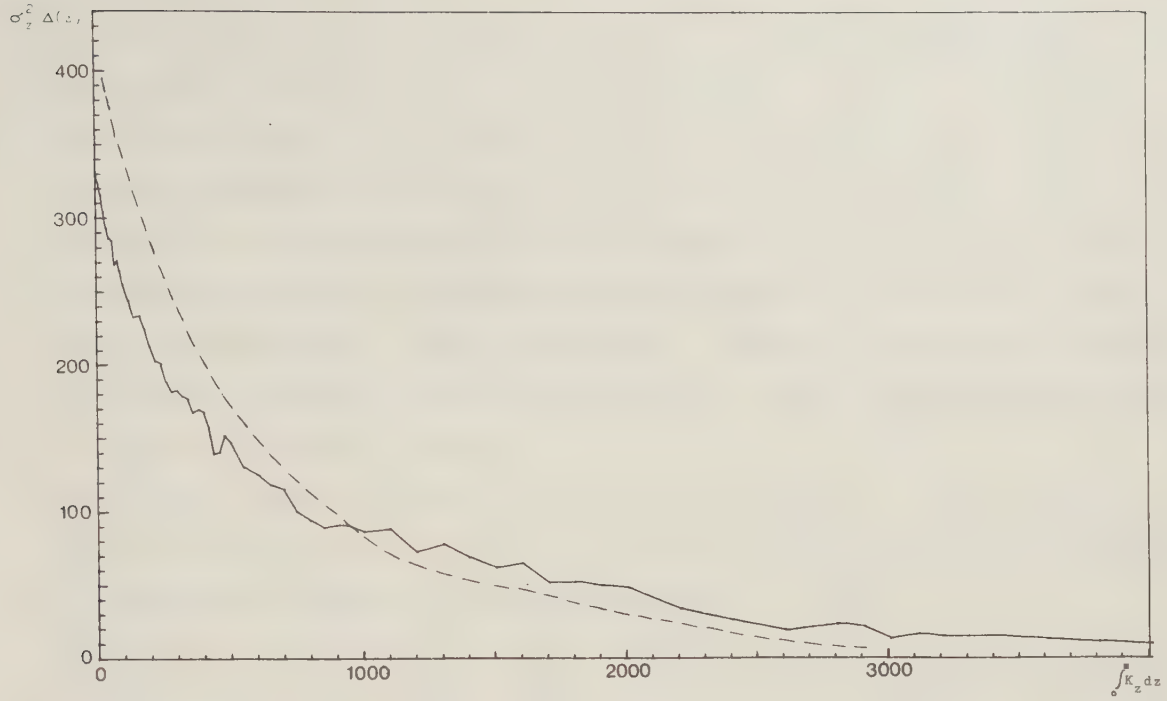


Fig. 10a. The integral (25) as a function of $\int_0^z K_z dz$ for the giants. The dotted line is described in the text (Section 7.3.4).

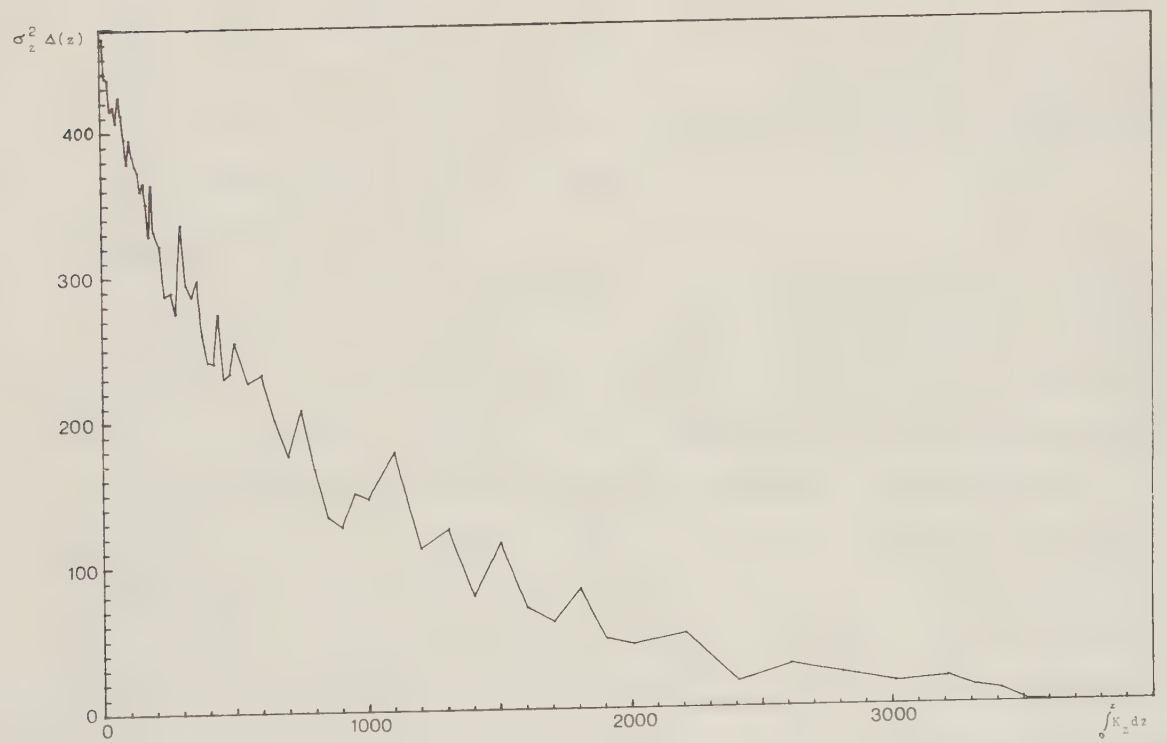


Fig. 10b. The integral (25) as a function of $\int_0^z K_z dz$ for the dwarfs.

7.3.4 Discussion.

A high-velocity component in the velocity distribution seems to affect the force function K_z considerably, as can be seen in Fig. 8. The numerical results for the function are very sensitive to the choice of the Gaussian high-velocity component. The proportion of this component and its velocity dispersion can hardly be determined with accuracy from the observed velocity distribution in the galactic plane. Deriving K_z directly from the observed distribution seems to be the most proper way to take due account to the high-velocity stars.

This form of the force function is not consistent with Poisson's equation, according to Oort (1960). His determination of the force K_z, satisfying this condition is marked in Figure 8.

Accepting the form of the force law K_z, which satisfies Poisson's equation, implies either a different density function or a different velocity distribution (or both):

1) Adopting the density function given in Fig. 4, we computed the integral (25) with Oort's K_z, and the result is shown as a dotted line in Figure 10. As the contributions from the high velocities in the integral will be relatively insensitive to the values of $\int K_z dz$, the velocity distribution should contain many more low-velocity stars, if the dotted line is valid. Such stars will not reach far from the galactic plane and should have been found in the velocity distribution determined from nearby stars in this paper.

2) Adopting the present velocity distribution with Oort's K_z, implies a density distribution, which decreases much steeper than the one determined in this paper to about 600 pc and flattens out to a nearly constant density between 700 and 1000 pc. Such a gradient seems to be inconsistent with the results found for the density function by different investigators.

The deviation from the theoretical form of the function K_z must be explained in some other way. Lacarrieu (1971) has found the same behaviour (maximum at 300 pc) and discusses several sources of error. A serious source of error may be the possible variation of the absolute magnitude with population type and with that the height over the galactic plane. Perhaps the stars are not so well-mixed as is generally assumed. This would make the mathematical methods doubtful or invalid.

7.4 The local mass density.

From the galactic force law, K_z, the mass density, ρ_o, at z = 0, can be derived from Poisson's equation:

$$\left(\frac{\partial K\varpi}{\partial \varpi} + \frac{K\varpi}{\varpi} + \frac{\partial K_z}{\partial z}\right)_{z=0} = -4\pi G \rho_o, \qquad (27)$$

where the first two terms can be expressed in Oort's constants:

$$\frac{\partial K\varpi}{\partial \varpi} = (A - B)(3A + B)$$

$$\frac{K\varpi}{\varpi} = -(A - B)^2$$

The sum of these terms was taken to $0.13 \cdot 10^{-30}$ sec^{-2} (Fricke 1967). The force function K_z was taken from the results in 7.3.3. However, the derivatives at z = 0 are somewhat different for the giants and the dwarfs. Since the density curve for the giants has been interpolated in the critical region, the result from the dwarfs seems to be of higher weight for small values of z, and was used for the mass density calculations.

The result is

$$\rho_o = 6.5 \cdot 10^{-24} \text{ g}\cdot\text{cm}^{-3} \quad \text{or} \quad 0.096 \text{ } M_\odot \cdot \text{pc}^{-3} \qquad (28)$$

Bok (1970) gives a list of some determinations of ρ_o varying from 0.09 to 0.14 $M_\odot/pc^3$, and states that a local mass density of about 0.09 is easily accounted for from observations of stars, interstellar gas and dust.

If K_z is derived from the giants, the mass density will be much lower than (28), $\rho_o = 0.065$ $M_\odot/pc^3$. Though this value has to be regarded as uncertain, it is interesting to note that Whitley (1977) in an investigation of A stars determined a theoretical mass density of 0.10 - 0.11 $M_\odot/pc^3$, but with the most reliable velocity data from Woolley and Stewart (1967), he would obtain only 0.04 $M_\odot/pc^3$!

8. CONCLUSIONS

The data gathered for this investigation has been used to determine the density distribution for stars of different spectral types in the direction of the South Galactic Pole. We have computed velocity distributions for the same spectral groups from apparently bright stars, in order to derive the galactic force law, K_z, and the local mass density.

Special attention has been paid to deriving homogeneous groups. It has been tacitly assumed, that the calibrations for intrinsic colours and absolute magnitudes are valid for all stars, even those at great distances from the galactic plane. Eggen (1969) supposes that the limit of $|z|$ reached by young disk stars is only 300 pc and that old disk stars dominate the level 300 - 500 pc. Here the density distribution for the giants could be determined only for stars near the sun and for stars at distances greater than 500 pc.

The spectral classification should be supplemented with some metal abundance index, to make it possible to take into account the "chemical gradient" in the galactic halo (Sandage 1969).

Obviously more extensive velocity data for the halo stars are also highly desirable.

ACKNOWLEDGEMENTS

I wish to express my sincere gratitude to Professor K. Gunnar Malmquist for introducing me to astronomical research and initiating this investigation.

Thanks are due to the Uppsala Astronomers at the Mount Stromlo Observatory, Drs B.E. Westerlund, G. Lyngå, and C. Roslund, for taking the plates.

The allocation of observing time at the 1 m and the 50 cm telescopes at the European Southern Observatory at La Silla, Chile, is greatfully acknowledged.

I am very much indebted to the Directors of the Uppsala Observatory, Professors K.G. Malmquist, E.B. Holmberg, and B.E. Westerlund, and the observatory staff for their kind support and help.

Finally, I wish to thank Professor T. Oja for putting data on bright stars at my disposal, for his encouraging help and advice during my research, and Professor B. E. Westerlund for reading the manuscript and for valuable discussions.

This research project has been partly supported by the Swedish National Science Research Council, for which I am very grateful.

REFERENCES

APPENZELLER, I.: 1975, *Astron. & Astrophys. 38,* 313

BOK, B.J., BOK, P.F.: 1961, *Monthly Notices Roy. Astron. Soc. 121,* 531

BOK, B.J., BASINSKI, J.: 1964, *Memoirs of the Mt Stromlo Obs. 16*

BOK, B.J.: 1970, Basic Problems on the Structure and Dynamics of our Galaxy, in *Galactic Astronomy,* Vol. 1, eds. H.-Y. Chiu, A. Muriel, Gordon and Breach, New York, p. 1

BOND, H.E., PERRY, C.L., BIDELMAN, W.P.: 1971, *Publ. Astron. Soc. Pacific 83,* 643

COUSINS, A.W.J., STOY, R.H.: 1962, *Roy. Obs. Bull. 49*

COUSINS, A.W.J.: 1967, *Monthly Notes Astron. Soc. Sth Afr. 26,* 151

COUSINS, A.W.J.: 1973, *Mem. Roy. Astron. Soc. 77,* 223

EGGEN, O.J.: 1958, *Monthly Notices Roy. Astron. Soc. 118,* 65

EGGEN, O.J.: 1969, *Publ. Astron. Soc. Pacific 81,* 741

ELVIUS, T.: 1965, Distribution of Common Stars in Intermediate and High Galactic Latitudes in Galactic Structure, Vol. V, in *Stars and Stellar Systems,* eds. A. Blaauw and M. Schmidt, Univ. of Chicago Press, p. 41

ERIKSSON, P.-I.: 1966, IAU Symposium no 24: *Spectral Classification and Multicolour Photometry,* eds. K. Lodén, L.O. Lodén, U. Sinnerstad, Academic Press, London and New York, p. 116

EVANS, D.S., LAING, J.D., MENZIES, A., STOY, R.H.: 1964, *Roy. Obs. Bull. 85*

FRICKE, W.: 1967, *Astron. J. 72,* 1368

HILL, E.R.: 1960, *Bull. Astron. Inst. Neth. 15,* 1 (No. 494)

HOLMBERG, E.B.: 1974, *Astron. & Astrophys. 35,* 121

HÄGGKVIST, L., OJA, T.: 1970, *Astron. & Astrophys. Suppl. 1,* 199

LJUNGGREN, B.: 1965, *Uppsala Astron. Obs. Medd.* No. 151

LJUNGGREN, B., OJA, T.: 1961, *Uppsala Astron. Obs. Ann. 4,* No. 10

LLOYD EVANS, T.: 1970, *Monthly Notices Roy. Astron. Soc. 149,* 311

LUYTEN, W.J., LA BONTE, A.E.: 1973, *The South Galactic Pole,* Minneapolis, Minnesota

MALMQUIST, K.G.: 1920, *Lund medd.ser.II,* No. 22

MALMQUIST, K.G.: 1941, *Uppsala Astron. Obs. Medd.* No. 82

MALMQUIST, K.G.: 1942, *Uppsala Astron. Obs. Medd.* No. 84

MALMQUIST, K.G., LJUNGGREN, B., OJA, T.: 1960, *Uppsala Astron. Obs. Ann. 4,* No. 8

OJA, T.: 1966, *Uppsala Astron. Obs. Ann. 5,* No. 4

OORT, J.H.: 1932, *Bull. Astron. Inst. Neth. 6,* 249 (No. 238)

OORT, J.H.: 1960, *Bull. Astron. Inst. Neth. 15,* 45 (No. 494)

PERRY, C.: 1969, *Astron. J. 74,* 139

PHILIP, A.G.D., TIFFT, L.E.: 1974, *Astron. J. 76,* 567

RHIJN, P.J. VAN: 1956, *Publ. Kapteyn Astron. Lab. Groningen,* No. 59

RODGERS, A.W.: 1971, *Astrophys. J. 165,* 581

RYDSTRÖM, B.: 1976,*Uppsala Astron. Obs. Report* No. 8

SANDAGE, A.: 1969, *Astrophys. J. 158,* 1115

SCHILT, J.: 1950, *Astron. J. 55,* 97

SMART, W.M.: 1949, Astronomical Photography in *Spherical Astronomy,* Cambridge Univ. Press, p. 278

TRUMPLER, R.J., WEAVER, H.F.: 1953, *Statistical Astronomy,* Univ. of California Press, Berkeley, California

UPGREN, A.R.: 1962, *Astron. J. 67,* 37

UPGREN, A.R.: 1963, *Astron. J. 68,* 194

UPGREN, A.R.: 1963, *Astron. J. 68,* 475

WHITLEY, R.: 1977, *Astron. & Astrophys. 59,* 329

WOOLLEY, R.: 1970, Box orbits of nearby stars in *Galactic Astronomy,* Vol. 2, eds. H.-Y. Chiu, A. Muriel, Gordon and Breach, New York, p. 95